

ACTION ON  
ARMED VIOLENCE

**AOAV**

**MONITORING  
EXPLOSIVE VIOLENCE**

---

The EVMP dataset 2011





**Report by**

Henry Dodd and Robert Perkins

**Editor**

Katherine Harrison

**With thanks to**

Maya Brehm, Esther Cann, Nerina Čevra, Richard Moyes, Thomas Nash, Serena Olgiati, Malcolm Rodgers and Steven Smith.

Copyright © Action on Armed Violence, March 2012

**Cover illustration**

A man cleans his damaged apartment in the city of Sirte following rocket attacks, 25 October 2011, REUTERS/Youssef Boudlal

Clarifications or corrections from interested parties are welcome.

Research and publication funded by the Government of Norway, Ministry of Foreign Affairs.

**Design and printing**

Tutaev Design

# Contents

<b>Introduction</b>	<b>1</b>
<b>Explosive Violence Monitoring Project (EVMP) key terms</b>	<b>3</b>
<b>Executive summary</b>	<b>5</b>
<b>Recommendations</b>	<b>7</b>
<b>Overview</b>	<b>9</b>
<b>Factors affecting civilian harm</b>	<b>16</b>
<b>Explosive weapons and civilian harm</b>	<b>19</b>
Manufactured explosive ordnance	<b>20</b>
Improvised Explosive Devices	<b>24</b>
<b>Further EVMP data</b>	<b>26</b>
<b>Case studies of explosive violence in 2011</b>	<b>30</b>
Libya	<b>31</b>
Syria	<b>34</b>
Iraq	<b>36</b>
<b>Conclusion</b>	<b>38</b>
<b>Annex:</b>	
<b>Explosive Violence Monitoring Project (EVMP) background</b>	<b>40</b>

## Introduction

The deaths, injuries, and damage caused by explosive weapons in countries as diverse as Libya, Syria, Côte d'Ivoire, and Afghanistan have dominated the global news agenda in 2011. In *Monitoring Explosive Violence: the EVMP dataset 2011*, Action on Armed Violence (AOAV) looks back at the data it has gathered from the global reporting of explosive violence from 1 January 2011 to 31 December 2011.

Explosive weapons are weapons which share common characteristics of causing injuries, deaths, and damage by projecting explosive blast, and often fragmentation, from a point of detonation.<sup>1</sup> The use of various types of explosive weapons, including artillery shells, improvised explosive devices (IEDs), rockets, and air-dropped bombs, has caused a distinct pattern of harm to civilians in 2011, particularly when used in populated areas.

AOAV's Explosive Violence Monitoring Project (EVMP) records data on incidents and immediate impacts of explosive weapon use through the collation and analysis of English-language media reports. During 2011, the EVMP gathered data from more than 500 different English-language news sources. These included international media agencies such as Reuters, The Associated Press, and Xinhua, as well as a diverse range of national news sources from countries like Iraq (Aswat al-Iraq), Pakistan (DAWN), and Somalia (Shabelle Media Network).

The EVMP is a contribution to a call for more systematic data collection and analysis of the human costs of explosive weapons use by the United Nations Secretary-General Ban Ki-moon in November 2010.<sup>2</sup> The data gathered by the EVMP is intended to be an indicator of the scale and scope of explosive weapons impacts in 2011. It is not an attempt to comprehensively capture and record the casualties

of every incident of explosive violence around the world and no claims are made in this report that this sample of data represents the total impact of explosive weapons on civilians in 2011. The data presented in this report is intended as a useful tool to provide a statistical basis for analysis on the use of explosive weapons in 2011.

The data presented here in many ways confirms assumptions put forth in earlier research by AOA and presents a more substantial quantitative picture of harm caused by explosive violence based on a much larger dataset. It also raises new findings that will need to be further explored through more in-depth research. The dataset overwhelmingly indicates that when explosive weapons are used in populated areas, the level of harm inflicted upon civilians is severe and disproportionate. Civilians made up the large majority of persons killed and injured by explosive weapons in 2011, a baseline pattern which was repeated across a range of explosive weapon types, delivery methods, and intended targets. The incidents in this report show that the use of explosive weapons in populated areas killed and injured civilians on a daily basis in 2011, and often in locations where civilians should be able to feel safe, such as markets, schools, churches, mosques, and in their own homes.

Firstly, the report considers an overview of the scale of explosive violence captured by the EVMP in 2011, focusing on the countries where civilians have been most affected and the known weapon types and users that have caused harm to civilians in 2011. Secondly, the report examines the contexts of explosive weapon use in which civilians experienced particularly elevated levels of harm. A variety of different factors were found to have affected the numbers and circumstances of recorded casualties of explosive violence in 2011, including the location

<sup>1</sup> The characteristics of explosive weapons are further detailed in Maya Brehm and John Borrie, "Explosive Weapons: Framing the Problem," Background Paper No. 1 of the Discourse on Explosive Weapons (DEW) project, *UNIDIR*, [explosiveweapons.info/wp-content/uploads/2011/04/DEW-paper-No-1.pdf](http://explosiveweapons.info/wp-content/uploads/2011/04/DEW-paper-No-1.pdf) (accessed 5 March 2012).

<sup>2</sup> "I would urge Member States, United Nations actors and international and non-governmental organizations to consider the issue of explosive weapons closely, including by supporting more systematic data collection and analysis of the human costs of their use. This is essential to deepening the understanding of the humanitarian impact of these weapons and to informing the development of policy and practice that would strengthen the implementation of international humanitarian and human rights law." United Nations Secretary-General Ban Ki-moon, in "Report of the Secretary-General on the protection of civilians in armed conflict," UN Security Council, S/2010/579, 11 November 2010, [www.un.org/Docs/sc/sgrep10.htm](http://www.un.org/Docs/sc/sgrep10.htm) (accessed 13 February 2012).

of an incident, the detonation method of the weapon, and targeting. The report considers the variations within these contexts and focuses in greater detail on the type of explosive weapon used in reported incidents. Finally, this report highlights some of the distinctive dynamics of explosive violence in case studies on Libya, Syria, and Iraq – three countries in which explosive weapons caused high numbers of civilian casualties in 2011.

The report focuses on the harm caused by explosive weapons at the time of use, and does not discuss harm caused by explosive weapons outside of active use, such as from incidents involving explosive remnants of war (ERW) or stockpiled explosive weapons, although summary findings from the

dataset on these areas are briefly noted.

The data presented in *Monitoring Explosive Violence: the EVMP dataset 2011* focuses primarily on the people who were reported to have been killed or injured by explosive weapons in 2011. However, explosive weapons are known to cause severe and long-lasting harm to civilians through impacts such as psychological trauma, damage to infrastructure and vital services, and broader socio-economic harm.<sup>3</sup> The full extent of these important aspects of humanitarian harm from explosive violence often develop over time and are likely to be under-reported in the news media reports which make up the source material of the EVMP dataset. Where possible, these are briefly explored in this report.



A man holds fragments of an IED as others clean blood off the marble floors of the Madina mosque after it was hit by a bomb blast in Pakistan's Khyber region; 19 August 2011; REUTERS/Fayaz Aziz

<sup>3</sup> For more information see Esther Cann and Katherine Harrison, "100 Incidents of Humanitarian Harm: Explosive weapons in populated areas, 2009-10," Action on Armed Violence (Landmine Action), March 2011, [www.aoav.org.uk/uploads/changing\\_policy/march\\_2011\\_100\\_incidents\\_of\\_humanitarian\\_harm.pdf](http://www.aoav.org.uk/uploads/changing_policy/march_2011_100_incidents_of_humanitarian_harm.pdf) (accessed 2 March 2012); Richard Moyes, "Explosive Violence: The problem of explosive weapons," Landmine Action, 2009, [www.aoav.org.uk/uploads/changing\\_policy/august\\_2009\\_explosive%20violence\\_the\\_problem\\_of\\_explosive\\_weap.pdf](http://www.aoav.org.uk/uploads/changing_policy/august_2009_explosive%20violence_the_problem_of_explosive_weap.pdf) (accessed 28 February 2012).

## Explosive Violence Monitoring Project (EVMP) key terms

### CASUALTY:

Refers to people who were killed or physically injured.<sup>4</sup>

### CIVILIAN/ARMED ACTOR OR SECURITY PERSONNEL:

Casualties were recorded as 'armed actors' only if they were reported as being part of the state military, members of non-state armed groups, or security personnel who the EVMP considers likely to be armed, for example police, security guards, intelligence officers, and paramilitary forces. All casualties that were not reported as belonging to the armed groups listed above were recorded as civilians.

### EXPLOSIVE VIOLENCE INCIDENT:

Refers to the use of explosive weapons that caused at least one casualty and took place in a period of under 24 hours.

### POPULATED AREA:

Refers to areas likely to contain concentrations of civilians.<sup>5</sup>

### EXPLOSIVE WEAPONS CATEGORIES:

Weapons were classified by the EVMP based on consistently used language in media reporting. The categories used are deliberately broad in order to capture a range of different weapon types in light of considerable variance in the level of detail provided by news sources.

### Improvised Explosive Devices (IEDs):

Refers to explosive weapons which were not mass produced (for more information see pp. 24-26). EVMP categories of explosive weapon included in this grouping are:

- **Car bomb:** Refers to incidents where an IED was clearly described as a 'car bomb,' where reference was made to a vehicle being part of an explosive device, rather than a means for delivery only, for example, a car packed with explosives. IEDs which were reported as being attached to vehicles, such as a sticky bomb attached to a politician's car or a remote control IED attached to a bicycle, were recorded as 'non-specific IEDs.'
- **Roadside bomb:** Refers to IEDs which were either specifically reported as 'roadside bombs' in the source or where an IED was reported to be used alongside a road and no further information was provided.
- **Non-specific IED:** Refers to all IEDs which could not be categorised as either 'roadside bombs' or 'car bombs.'
- **Multiple IED types:** Refers to incidents where a combination of different IEDs were used in an incident, and where news sources do not separately attribute casualties as having been caused by individual devices.

### Manufactured explosive ordnance:

Explosive weapon types that are commonly produced by commercial companies or state-owned industries (for more information see pp. 20-23). EVMP categories of explosive weapons included in this grouping are:

- **Air strike:** Refers to incidents where explosive weapons were reported as delivered by drones, planes, helicopters, or other aircraft, and the specific munition fired was not mentioned in the

<sup>4</sup> The people injured by explosive weapons may include casualties who were treated for psychological harm. These are rarely clearly described in news sources as distinct from physical wounds, but may have been included where, for example, news sources quote hospital sources and do not provide further detail regarding the types of injuries. The EVMP cannot determine what criteria are used by each media source to determine how severe an injury must be to be reported as a casualty, and is therefore subject to the assessment of its sources.

<sup>5</sup> The definition of a populated area used by the EVMP is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: "any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or group of nomads." The full definition is available at: "Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III)," Geneva, 10 October 1980, [www.icrc.org/ihl.nsf/FULL/515](http://www.icrc.org/ihl.nsf/FULL/515) (accessed 2 March 2012). EVMP guidelines for recording an area as populated are included in the Annex.

news source.<sup>6</sup> Where the munition was specified in news sources they were recorded as a more specific weapon category (see below).

- **Air-dropped bomb:** Refers to bombs which were reported as delivered by air. References to areas being ‘bombed’ by military aircraft were recorded as ‘air-dropped bomb.’
- **Missile:** These may be air or ground-launched and were recorded when reference was made to the ‘missile’ being explosive.<sup>7</sup>
- **Rocket:** Weapons were recorded as ‘rockets’ wherever they were specified in a news source, or where a known rocket type was reported in the incident (e.g. Grad, Katyusha). These were reported as both air and ground-launched.
- **Artillery shell:** A ground-launched explosive projectile fired from a gun, cannon, howitzer or recoilless gun (rifle). ‘Artillery shell’ refers to medium and large-calibre munitions primarily designed to fire indirectly.<sup>8</sup> The EVMP records incidents as caused by an ‘artillery shell’ wherever specified in news sources.
- **Mortar:** Refers to incidents where the news source specified that a mortar bomb was the munition used.<sup>9</sup>
- **Tank shell:** Refers to explosive shells fired by tanks, as specified in news sources.
- **Unspecified shelling:** Refers to news sources which describe the use of explosive shells but do not specify how they were delivered, whether by mortars, artillery, or tanks.
- **Grenade:** Refers to grenades reported as deploying an explosive blast and/or fragmentation, for example ‘hand grenades,’ ‘grenades fired from a launcher,’ and ‘rifle-launched grenades.’ Grenades specifically described as ‘handmade’ were recorded as IEDs.<sup>10</sup>
- **RPG:** Refers to rocket-propelled grenades. Grenades which are fired from a launcher or are rifle-launched were recorded as ‘grenades’ rather than ‘RPGs.’
- **Multiple manufactured types:** used to refer to incidents where a combination of different explosive weapon types were used and it was not possible to attribute casualties to each munition.
- **Mines:** Refers to incidents where the explosive weapon was described as a landmine.<sup>11</sup>

<sup>6</sup> Attacks described as air strikes can combine the firing of explosive missiles, the dropping of aerial bombs, and/or strafing using automatic weapons. There is often a lack of detail in media and official statements as to which specific weapons were used. On this basis incidents reported as air strikes were recorded as the use of an explosive weapon unless it was clear that only non-explosive weapons were used.

<sup>7</sup> Missiles are defined as “an armament store designed to be released from an aircraft or discharged from a gun or launcher towards a selected point usually to cause damage at that point.” International Ammunition Technical Guideline, “Glossary of terms, definitions and abbreviations,” *United Nations Office for Disarmament Affairs*, IATG 01.40:2011(E) 1st Edition (2001-10-01), [www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary\\_and\\_Definitions\(V.1\).pdf](http://www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions(V.1).pdf) (accessed 6 March 2012).

<sup>8</sup> The EVMP does not employ a single technical definition of an artillery shell in its categorization of media reporting, and relies on definitions based in part on International Ammunition Technical Guideline, “Glossary of terms, definitions and abbreviations,” *United Nations Office for Disarmament Affairs*, IATG 01.40:2011(E) 1st Edition (2001-10-01), [www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary\\_and\\_Definitions\(V.1\).pdf](http://www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions(V.1).pdf) (accessed 6 March 2012); and NATO, “Glossary of terms and definitions concerning the safety and suitability for service for munitions, explosives and related products,” AOP-38, April 2002, [www.nato.int/structur/ac/310/pdf/aop-38-3.pdf](http://www.nato.int/structur/ac/310/pdf/aop-38-3.pdf) (accessed 6 March 2012).

<sup>9</sup> Mortars are generally indirect-fire weapons which fire projectiles over a high-trajectory and do not depend on a line-of-sight. Erich G. Berman, Pierre Gobinet and Jonah Leff, “Mortars,” *Small Arms Survey*, Research Notes - Number 2, February 2011, [www.smallarmssurvey.org/fileadmin/docs/H-Research\\_Notes/SAS-Research-Note-2.pdf](http://www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf) (accessed 1 March 2012).

<sup>10</sup> In a number of incidents it was unclear from the source reports whether the grenade was manufactured or improvised, see for example: “A locally-made grenade, which works on the mechanism of Russian made devices was used in the attack,” Police officer Naeem Shaikh quoted in “Another grenade attack in Lyari,” *Dawn*, 15 October 2011, [www.dawn.com/2011/10/15/another-grenade-attack-in-lyari.html](http://www.dawn.com/2011/10/15/another-grenade-attack-in-lyari.html) (accessed 5 March 2012).

<sup>11</sup> The category of ‘mines’ includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as ‘mines’ or in ambiguous language and it is not clear in many incidents whether these incidents involve manufactured or improvised explosive weapons. For detailed information on the incidents of antipersonnel and other types of mine use around the world see International Campaign to Ban Landmines and Cluster Munition Coalition, *The Landmine and Cluster Munition Monitor 2011*, October 2011, [www.the-monitor.org/index.php/publications/display?url=lm/2011/](http://www.the-monitor.org/index.php/publications/display?url=lm/2011/) (accessed 1 March 2012).



## Executive summary

### IN 2011, CIVILIANS SUFFERED FAR MORE FROM THE EFFECTS OF EXPLOSIVE WEAPONS THAN ARMED ACTORS.

- The majority of the people who were reported killed or injured by explosive weapons in 2011 were civilians. The data gathered from news sources reporting on incidents of explosive violence shows that at least 21,499 civilians were reported killed or injured by explosive weapons in 2011. **Overall, 71% of all casualties of explosive weapons were civilians.**<sup>12</sup>
- More than 18,000 civilian casualties were recorded in populated areas. Of all the civilian casualties that were recorded throughout the year, **87% occurred in populated areas.** Of all the casualties that were recorded in populated areas, **84% were civilians.**
- The EVMP recorded **4,807 civilian casualties worldwide from 200 incidents in places of worship, markets, and public gatherings.** Incidents occurring in certain civilian areas where the use of explosive weapons has been to some extent stigmatized and prohibited under international law, such as attacks on schools, hospitals, and humanitarian infrastructure were comparatively less common, with 58 incidents recorded.

### CERTAIN EXPLOSIVE WEAPONS TYPES AND CHARACTERISTICS OF USE WERE PARTICULARLY DANGEROUS TO CIVILIANS.

- **Of all recorded incidents of explosive weapons use in the EVMP dataset, IEDs were responsible for the majority of all recorded civilian casualties from explosive violence in 2011 (61%).** The practice of detonating IEDs in areas likely to include concentrations of civilians is of particular concern and has had severe impacts on civilians. For example, nearly three-quarters of incidents involving car

bombs were recorded in populated areas. These incidents caused an average number of civilian casualties per incident that was nearly ten times that of road-side bombs, which were often specifically used to target single vehicles.

- Across all locations of use, **the percentage of IED casualties who were civilians was 76%,** a scale of harm that was comparable with the percentage of civilian casualties caused by many manufactured weapons such as mortars (90%), rockets (69%), and grenades (86%).
- **79% of all incidents of the use of manufactured explosive weapons in populated areas were ground-launched, compared to 20% identified as air-delivered.** This challenges perceptions that explosive weapons use is primarily about large-scale aerial bombings such as those seen in World War II or the Vietnam War and indicates a need for greater attention to the use of ground-launched weapons in populated areas.
- In 2011, certain explosive weapon types when used in populated areas had particularly high impacts on civilians (as opposed to armed actors). The use of mortars and other indirect fire weapons was found to have caused an extremely high proportion of civilian casualties. **90% of all the casualties recorded as caused by mortars were civilians.**

### EXPLOSIVE WEAPONS KILLED AND INJURED CIVILIANS IN A RANGE OF LOCATIONS AND SETTINGS IN 2011.

- Explosive violence was geographically widespread but particularly intense in certain countries and conflicts. While incidents were recorded in 68 countries and territories, in 27 of those there was one recorded incident. **The top five countries with the highest reported civilian casualties from explosive violence recorded**

<sup>12</sup> Casualties refers to persons killed and injured.



by the EVMP (Iraq, Pakistan, Afghanistan, Libya, and Somalia) incurred 71% of all recorded civilian casualties.

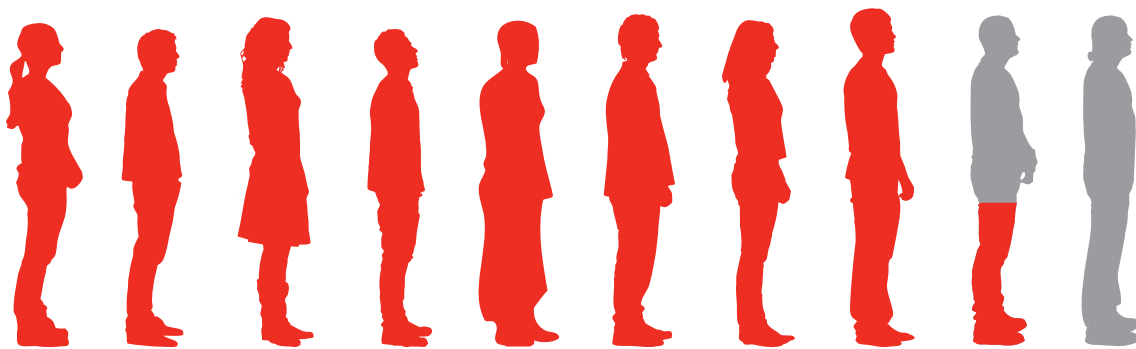
- Explosive violence was reported in contexts outside of the conduct of hostilities. One distinct example was the widespread use of grenades by non-state actors, which was recorded in 34 different countries and territories in 2011.
- The use of explosive weapons by a state within its own territory and amongst its own citizens was seen in several contexts, such as the shelling of cities in Syria, Libya, and Yemen. In these countries **the escalation in the frequency and intensity of the use of explosive weapons marked a wider decline in security conditions** and indicated a breakdown in the relationship of accountability between the state and its citizens accompanied by a humanitarian crisis.

## Who is in most danger?

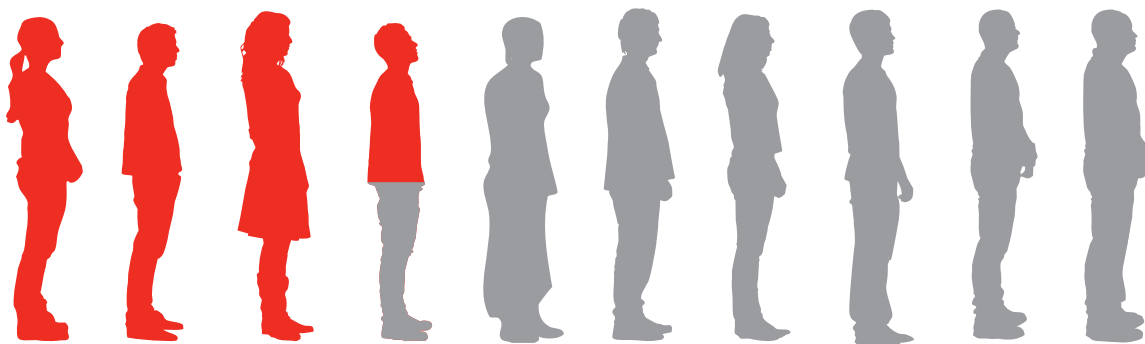
The majority of casualties from explosive weapons were civilians.

Civilians were most at risk when explosive weapons are used in populated areas.

● civilians      ● armed actors



In populated areas, more than eight of every ten casualties from explosive weapons were civilians.



In other areas, over three casualties in every ten were civilians.

## Recommendations

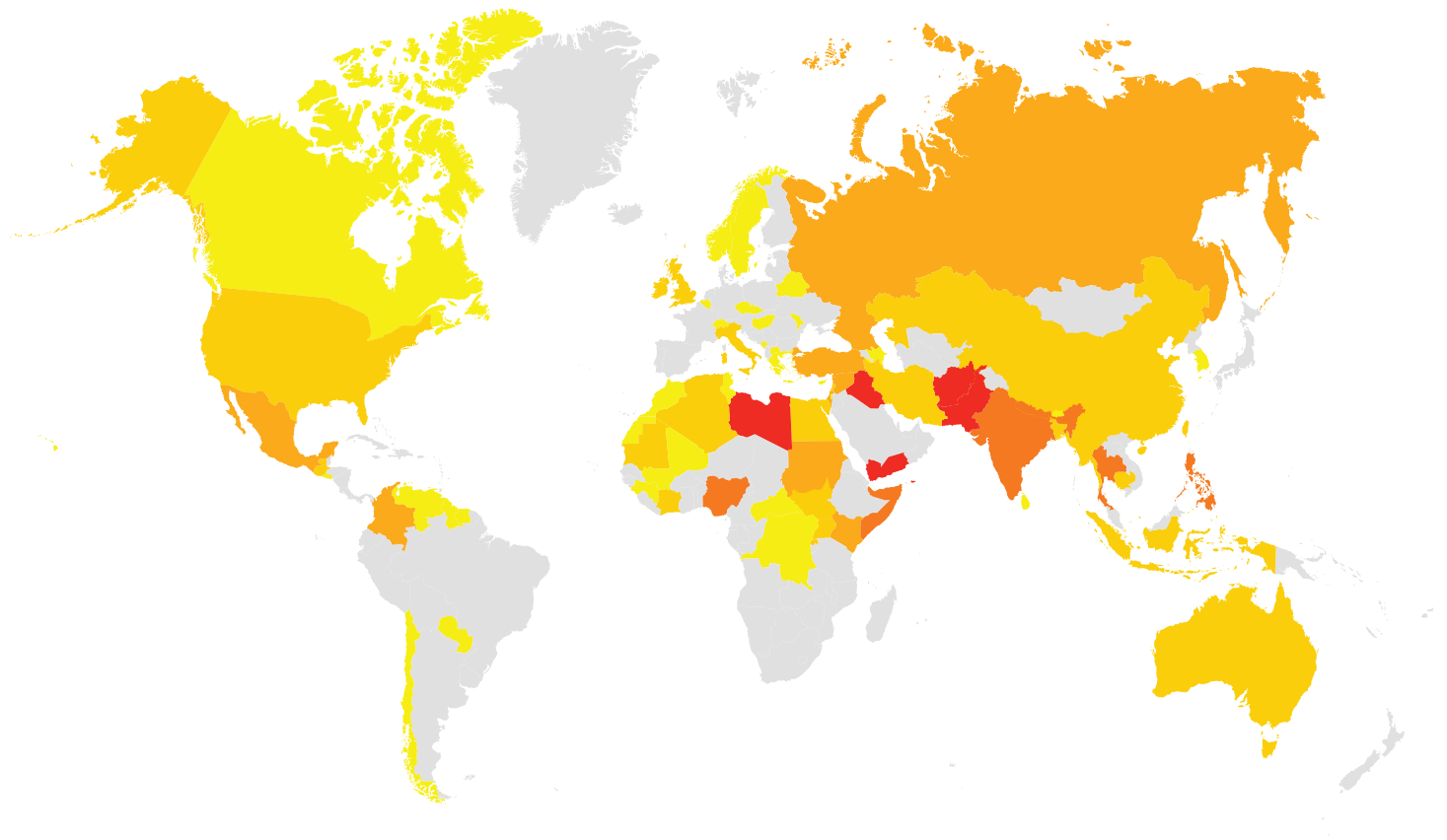
- AOAV has identified broad ‘preventive priorities’ to mitigate the impact of explosive weapons on civilians.<sup>13</sup> Key among these is a strong presumption against the use of explosive weapons in populated areas. The pattern of harm illustrated in the findings of this report reinforces the need for all users of explosive weapons to refrain from using them in populated areas.
- The developing stigma against the use of explosive weapons in populated areas must be extended and entrenched. States should use the opportunity of the next UN Security Council Protection of Civilians debates in 2012 to make clear their concerns around the harm these weapons cause to civilians. States, international organisations, and civil society should actively strive to increase the stigmatization of the use of explosive weapons in populated areas.
- The EVMP dataset shows clear evidence of the particularly high levels of harm caused to civilians when Multiple Launch Rockets (such as the Grad system) and mortars were used in populated areas. Actors should review their existing policies on the use of such weapons and put in place mechanisms to prevent their use in populated areas.
- As a whole, the incidents and the impacts documented in this dataset are indicative of the inadequacy of existing provisions of international humanitarian law, which govern the use of force in many of the explosive violence incidents recorded, to sufficiently protect civilians from the harm of explosive weapons.
- In a number of contexts in 2011 the use of explosive weapons by a state within its own borders was seen to signal a developing crisis, and was followed by large-scale civilian casualties. Explosive weapon use by a state within its own borders should be seen as an indicator of crisis.
- All possible measures must be taken to control and limit the impacts of IEDs on civilians. Where possible, pressure should be placed on non-state actors and users of IEDs through dialogue and other available means of engagement. A shift to consider the issue of IEDs in a framework based on humanitarian impacts rather than through the commonly used ‘terrorism’ lens, which is fraught with political implications, would be a beneficial step towards addressing the predominant levels of civilian harm from IEDs identified in the EVMP dataset.
- States should prioritise and increase efforts to control the components of IEDs, including transfers and trading of chemicals, ensuring the security of stockpiled explosive ordnance, and the rapid clearance of explosive remnants of war.
- States, international organisations, and non-governmental organisations should gather and make available data on the impacts of explosive weapons when used in populated areas. In particular, users of explosive weapons have a responsibility to record the impacts of these weapons.
- All fatalities of explosive weapons should be recorded and recognised, in line with the recently-established *Charter for the recognition of every casualty of armed violence*.<sup>14</sup>
- States and users of explosive weapons should recognize the rights of victims of explosive violence, including those killed and injured, their families, and affected communities, and strive to ensure the timely and adequate provision of needed services for recovery, rehabilitation, and inclusion, without discrimination.

<sup>13</sup> Esther Cann and Katherine Harrison, “100 Incidents of Humanitarian Harm: Explosive weapons in populated areas, 2009-10,” Action on Armed Violence (Landmine Action), March 2011, [www.aoav.org.uk/uploads/changing\\_policy/march\\_2011\\_100\\_incidents\\_of\\_humanitarian\\_harm.pdf](http://www.aoav.org.uk/uploads/changing_policy/march_2011_100_incidents_of_humanitarian_harm.pdf) (accessed 2 March 2012).

<sup>14</sup> “Charter for the recognition of every casualty of armed violence,” [www.everycasualty.org/charter](http://www.everycasualty.org/charter) (accessed 5 March 2012). The Charter is founded on the principle that no person should die unrecorded from any form of armed violence, and calls for resolute action by states to ensure that every direct casualty of armed violence is promptly recorded, correctly identified, and publicly acknowledged. This charter has been endorsed by AOAV and by a growing number of civil society organisations.

## World map showing incidents of explosive violence recorded by the EVMP in 2011

The EVMP recorded explosive violence in 68 countries and territories across the world. Explosive violence was particularly intense in several contexts.



- **Countries with between 100 and 600 incidents**  
 Afghanistan 575, Iraq 530, Pakistan 368, Yemen 149, Libya 134
- **Countries with between 50 and 100 incidents**  
 Somalia 96, Gaza 92, Thailand 76, India 55, Nigeria 55, Philippines 55
- **Countries with between 15 and 50 incidents**  
 Syria 45, Colombia 35, Turkey 27, Russia 25, Israel 21, Mexico 21, Sudan 20, Kenya 18
- **Countries with between 2 and 15 incidents**  
 USA 11, Algeria 9, Lebanon 8, Burma 7, Côte d'Ivoire 7, Cambodia 6, China 6, Egypt 5, Indonesia 5, Nepal 5, Kazakhstan 4, Rwanda 4, South Sudan 3, UK 3, Australia 2, Bangladesh 2, Guatemala 2, Iran 2, Italy 2, Mauritania 2, Republic of Ireland 2, Uganda 2
- **Countries and territories with 1 incident**  
 Azerbaijan, Belarus, Belgium, Bhutan, Canada, Central African Republic, Chile, Cyprus, Czech Republic, Democratic Republic of Congo, El Salvador, Greece, Guinea, Guyana, Kosovo, Mali, Moldova, Morocco, Norway, Paraguay, South Korea, Sri Lanka, Sweden, Switzerland, Tunisia, Venezuela, West Bank



## Overview

- In 2011 the EVMP recorded **30,127** people killed or injured by explosive weapons in **2,522** incidents.
- **21,499** civilians were killed or injured, or **71%** of all casualties.
- Incidents were recorded in **68** countries and territories.

The majority of casualties of explosive weapons were civilians (71%). When used in populated areas, the percentage of civilian casualties of explosive weapons rose to 84%. This finding supports previous claims made based on an analysis of six months of data by AOAV in 2009, and is drawn from a much larger dataset.

### TOTAL CASUALTIES<sup>15</sup>

The majority of people killed or injured by explosive weapons between 1 January and 31 December 2011 were either described as civilians, or no mention was given to them being security personnel or armed actors. Incidents were reported in a variety of countries and contexts worldwide, involving both state and non-state actors and in both conflict and non-conflict situations.

In total the EVMP recorded 30,127 people who were killed or injured by explosive weapons use in 2,522 incidents.<sup>16</sup> The majority (71%) of these casualties were reported as civilians.

Incidents of explosive violence were reported on an

almost daily basis in news sources around the world. Every month, an average of 2,511 people were recorded killed or injured by explosive weapons. The 2011 data also shows that explosive weapons wounded many more people than they killed, with only 34% of casualties reported as fatalities. However, since the data in this report is based on media accounts of the immediate aftermath of an incident, it is a fair assumption that the actual death toll could be much higher. Incidents of explosive weapons use were also found to result in multiple deaths and injuries, due to their characteristic blast and fragmentation effects. The EVMP recorded an average of between eight and nine civilian casualties per incident.<sup>17</sup>

### WHERE WERE EXPLOSIVE WEAPONS USED?

Explosive violence was recorded around the world in 68 countries and territories. The map on page eight shows that the use of explosive weapons was geographically widespread and was particularly intense in certain countries and conflicts.<sup>18</sup> Despite the wide geographical spread of explosive violence in 2011, in 27 countries there was one recorded incident in the year.

<sup>15</sup> Throughout this term is used to refer to persons killed and injured by explosive weapons.

<sup>16</sup> 'Incident' refers to use of explosive weapons causing at least one casualty in a period of under 24 hours.

<sup>17</sup> There was an average of 11.9 total casualties per incident and 8.5 civilian casualties.

<sup>18</sup> It should be noted that as the data for this report is based on English-language media sources, some conflicts and contexts are likely to receive greater coverage than others. For more further limitations see Annex: Explosive Violence Monitoring Project (EVMP) background.

Figure 1 shows the fifteen countries where the largest numbers of civilian casualties were recorded. The three countries with the highest number of civilian casualties from explosive violence were Iraq, Pakistan, and Afghanistan; countries where ongoing hostilities have caused more than 11,000 civilian casualties recorded by the EVMP in 2011.

The single incident of explosive violence with the highest number of reported civilian casualties in 2011 took place on 4 October in Mogadishu, Somalia. A truck loaded with explosives was driven into a gov-

ernment compound killing and injuring a reported 267 people, many of whom were students. Al-Shabaab claimed responsibility for the attack.<sup>19</sup>

In the top three countries in Figure 1, as well as in Colombia, India, Nigeria, the Philippines, southern Russia, and southern Thailand, non-state actors were responsible for large numbers of civilian casualties and widely used both IEDs and manufactured explosive ordnance. In Somalia, Afghanistan, Colombia, Gaza, Libya, Pakistan, and Syria both non-state and state use of explosive weapons caused casualties.

**Figure 1 Top 15 countries and territories with the highest reported number of civilian casualties from explosive violence**

	Country	Civilian casualties	Number of incidents	Average civilian casualties per incident	Percentage of casualties that were civilians
1	<b>Iraq</b>	5,715	530	11	81
2	<b>Pakistan</b>	3,292	368	9	66
3	<b>Afghanistan</b>	2,791	575	5	61
4	<b>Libya</b>	2,108	134	16	67
5	<b>Somalia</b>	1,326	96	14	84
6	<b>Yemen</b>	943	149	6	49
7	<b>Syria</b>	937	45	21	92
8	<b>Nigeria</b>	769	55	14	90
9	<b>India</b>	455	54	8	77
10	<b>Gaza</b>	304	92	3	71
11	<b>Russia</b>	288	25	12	69
12	<b>Thailand</b>	273	76	4	55
13	<b>Philippines</b>	242	55	4	66
14	<b>Colombia</b>	216	36	6	56
15	<b>Sudan</b>	182	20	9	89

<sup>19</sup> Peter Martell, "More than 70 killed in Mogadishu car bomb carnage," *AFP*, posted by *Google Hosted News*, 4 October 2011, [www.google.com/hostednews/afp/article/ALeqM5g8w3QROBDG7oNrU5S29-zyCps\\_gQ?docId=CNG.d69c3a175b65c91d91c5c9096d975f5b.361](http://www.google.com/hostednews/afp/article/ALeqM5g8w3QROBDG7oNrU5S29-zyCps_gQ?docId=CNG.d69c3a175b65c91d91c5c9096d975f5b.361) (accessed 17 February 2012).

The year also saw explosive violence emerging as a humanitarian concern in Libya, Syria, Nigeria, and Yemen. The transition towards the use of these weapons represented both a significant intensification of violence, and when explosive weapons were used by the state among its own population, as seen in Libya, Sudan, Syria, Somalia, and Yemen, indicated a breakdown in state legitimacy.

### WHO USED EXPLOSIVE WEAPONS?<sup>20</sup>

In most instances it was not possible to identify who was responsible for the use of an explosive weapon based on media reporting. *Figure 2* shows that in those incidents where it was possible to identify a user, a similar proportion of civilian casualties were caused by state (21%) and non-state (24%) actors.<sup>21</sup>

The states recorded as using explosive weapons most frequently during 2011 include: states participating in North Atlantic Treaty Organization (NATO) operations in Afghanistan and Libya, states participating in the African Union mission in Somalia (AMISOM), and state forces in Libya, Cambodia, Israel, Pakistan, Sudan, Syria, Thailand, and Yemen. Among the non-state

groups reported as using explosive weapons in 2011 were Taliban militants (reported in incidents in Pakistan and Afghanistan), Boko Haram (in Nigeria), Kurdistan Workers Party (in Turkey), FARC (in Colombia), Islamic State of Iraq (in Iraq), and Al-Shabaab (in Somalia).

In the majority of incidents the user of the explosive weapon was not clearly reported. However, as 77% of “unknown” user incidents involved IEDs and there were no reported incidents of IEDs used by states recorded by the EVMP, the proportion of non-state users is potentially much higher. In those incidents where a user was reported, non-state actors were responsible for 7,272 casualties of which 73% were civilians. State use of explosive weapons was responsible for 7,304 casualties, of which 61% were civilians.

At the same time, the extent of civilian casualties resulting from state use of explosive weapons is likely to be under-represented in the data. A particular pattern of state use was the use of large numbers and multiple types of explosive weapons,



A man severely wounded during an IED explosion sits inside an ambulance in Mogadishu before being taken to Turkey for specialist treatment; 6 October 2011; REUTERS/Feisal Omar

<sup>20</sup> For information on how users are recorded see Annex: Explosive Violence Monitoring Project (EVMP) background.

<sup>21</sup> 4% of civilian casualties occurred in exchanges between state and non-state groups where the user responsible for the casualties could not be clearly identified.



often over sustained periods, which is less likely to be captured by news reporting in ways that can be analysed by the methodology of this report. It is also more difficult to distinguish and record which weapon type was responsible for which casualties in these circumstances, in comparison with an incident of IED use for example.

### HOW WAS HARM CAUSED?

The EVMP recorded information on the type of weapon used in every incident of explosive violence captured during 2011. Reported weapon types were classified into a range of descriptive categories based on the language commonly used in news sources.<sup>22</sup> The level of detail provided by media reports on the explosive weapon used in a given incident varied considerably. Categories of weapons used by the EVMP are therefore based on consistently used language, and deliberately kept broad to capture a range of different weapon types.<sup>23</sup>

**Figure 2 Percentage of total civilian casualties by user**

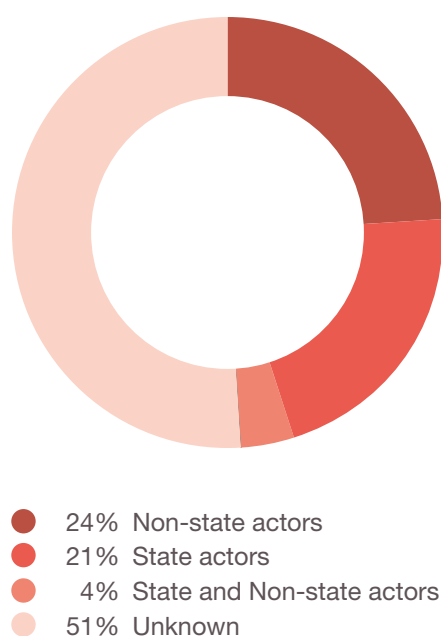
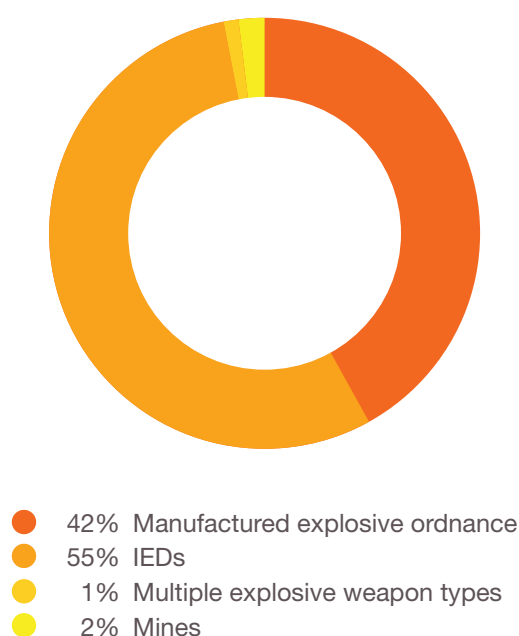


Figure 3 shows weapon types grouped into IEDs,<sup>24</sup> manufactured explosive ordnance,<sup>25</sup> mines,<sup>26</sup> and incidents which involved a combination of these three groups. Overall, incidents reported as involving IEDs were the most frequently recorded by the EVMP. In total they made up 55% of all incidents, compared to manufactured explosive ordnance which were responsible for 42%. However, incidents of multiple IED use were more often reported as separate incidents compared to other weapon types.

For instance, on 1 June 2011 a series of three IEDs exploded in quick succession in a rubber plantation in Thailand; the first blast was reported to have injured a villager, the second to have killed and injured six security personnel, and the final blast reportedly injured one of the officers investigating the bombings.<sup>27</sup>

**Figure 3 Percentage of incidents by explosive weapon type**



<sup>22</sup> For a full list of weapon categories used by the EVMP see *EVMP Key Terms*, p 3.

<sup>23</sup> The EVMP also recorded casualties reported from incidents involving 'stockpile explosions' and 'unexploded ordnance' (UXO). These two categories are not included in the data presented for analysis in this report however as the report focuses on the recorded impacts of explosive weapons at the time of use.

<sup>24</sup> IEDs are broken down into three subcategories by the EVMP: 'roadside bombs,' 'car bombs,' and 'non-specific IEDs.'

<sup>25</sup> Manufactured explosive ordnance are broken down into 11 subcategories of weapons by the EVMP: 'air strike,' 'air-dropped bomb,' 'artillery shell,' 'grenade,' 'missile,' 'mortar,' 'multiple types,' 'rocket,' 'RPG,' 'shelling,' and 'tank shell.' They are discussed in greater detail in pages 20-23.

<sup>26</sup> The category of 'mines' includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as 'mines' or in ambiguous language and it is not clear in many incidents whether these incidents involve manufactured or improvised explosive weapons.

<sup>27</sup> "Two killed, six wounded in three Yala bombings," MCOT, 1 June 2011, [www.mcot.net/cfcustom/cache\\_page/217212.html](http://www.mcot.net/cfcustom/cache_page/217212.html) (accessed 17 February 2012).

By contrast, news reports of periods of sustained bombardment often did not attribute casualties to each item of ordnance and so could only be treated as a single incident by the EVMP. For instance, on

6 April 2011, 24 people were reported to have been killed in a 90 minute bombardment of Misrata which involved at least 80 rockets.<sup>28</sup>



Family members and hospital staff at a morgue in Quetta, Pakistan try to identify the victims of an IED attack; 7 September 2011; REUTERS/Naseer Ahmed

<sup>28</sup> "Rebels warn of 'massacre' in Misrata," Al Jazeera, 14 April 2011, [www.aljazeera.com/news/africa/2011/04/201141494016905479.html](http://www.aljazeera.com/news/africa/2011/04/201141494016905479.html) (accessed 14 April 2011).

## Factors affecting civilian harm

- In populated areas **84%** of casualties were reported as civilians, compared to **35%** in other areas.
- **1,961** casualties were reported in **91** incidents in markets. **94%** of these casualties were civilians.
- Nearly half (**49%**) of all casualties were civilians in incidents reportedly targeting armed actors.

## Key findings

- The majority of incidents (55% or 1,375 incidents) occurred in populated areas.
- Use in populated areas severely affected the proportion of civilian casualties caused by explosive weapons. 84% of casualties were civilians when explosive weapons were used in populated areas compared to 35% in other areas. This pattern of harm is not surprising – it is obvious that where there are concentrations of civilians and civilian infrastructure, civilians will be at much greater risk.
- In incidents where explosive weapons were reported to be used to target armed actors, 49% of casualties were reported to be civilians.
- Attacks recorded as taking place near schools, hospitals, and humanitarian infrastructure were comparatively fewer than incidents recorded as occurring in markets, places of worship, and public gatherings (58 incidents compared to 200). This could be an indication of a greater stigmatization of and respect for the prohibition under international law on attacks on schools, hospitals, and humanitarian infrastructure.<sup>29</sup> Attacks on religious places and civilian homes however are equally prohibited under international law. Greater stigmatization and uniform condemnation of such types of attacks, which the EVMP recorded as causing elevated levels of civilian casualties, could help reduce humanitarian harm from explosive weapons.
- Where the mode of detonation involved ‘self-killing,’ the number of civilian casualties per incident was more than three times that of other incidents of explosive weapons use.

<sup>29</sup> See for example Rule 8 concerning the definition of Military Objectives, Rule 35 concerning Attacks Against Cultural Property, Rule 32 concerning Safety of Humanitarian Relief Operations, and Rule 38 concerning Attacks against Cultural Property. ICRC, “Customary International Humanitarian Law,” 2005, [www.icrc.org/eng/assets/files/other/customary-international-humanitarian-law-i-icrc-eng.pdf](http://www.icrc.org/eng/assets/files/other/customary-international-humanitarian-law-i-icrc-eng.pdf) (accessed 8 March 2012).



This section of the report explores a variety of different factors which were found to affect the impact of explosive weapons on civilians. The location of an incident, the detonation method, the target, and the type of explosive weapon are all analysed in this section as significant factors impacting the number of casualties and the likelihood that those casualties were civilians.

### EXPLOSIVE WEAPONS IN POPULATED AREAS

When civilians and infrastructure are located close to or within the areas over which blast and fragmentation from explosive weapons are projected, the impacts of the weapons are more difficult to control. In some cases, civilian areas may be deliberately targeted by explosive weapon users due to the very nature of the indiscriminate and wide area effects. When used in populated areas, explosive weapons caused more than six times the number of civilian casualties than when used in other areas.

As *Figure 4* shows, when explosive weapons were used in populated areas a high proportion of the resulting casualties were reported to be civilians.<sup>30</sup> In total, in 2011 the EVMP recorded 18,803 civilians reported killed or injured in populated areas. More than half of all incidents (55%) occurred in areas which were either reported as containing large numbers of civilians, for example a 'busy street,' or in or near locations which were considered likely to contain concentrations of civilians, such as markets and places of worship.<sup>31</sup> In these incidents, 84% of recorded casualties were civilians. By contrast, in other areas, such as military bases and agricultural land, just over a third (35%) of casualties were civilians.

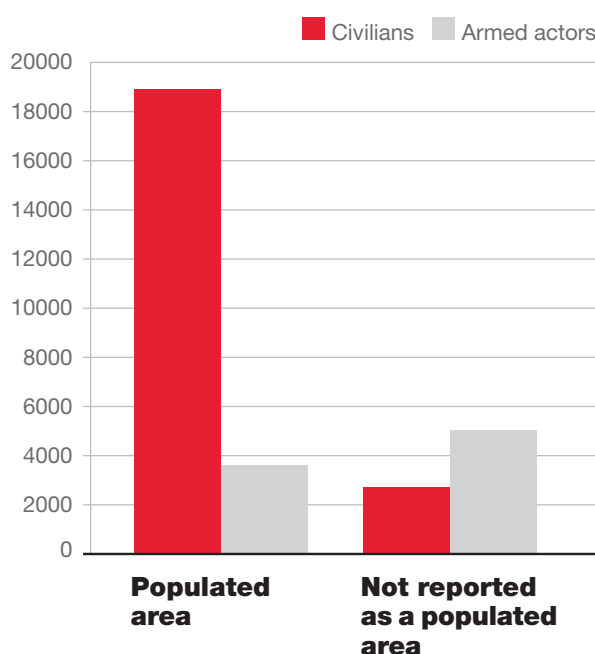
When explosive weapons were used in or near locations<sup>32</sup> likely to contain large crowds of civilians such as places of worship, markets, or public

gatherings such as religious pilgrimages or funeral processions, the vast majority of reported casualties were civilians.

In 2011:

- 90% of casualties in or near places of worship were reported to be civilians.
- 96% of casualties in or near markets were reported to be civilians.
- 94% of casualties at public gatherings were reported to be civilians.

**Figure 4 Total casualties by populated/non-populated area**



In 2011, there were 58 incidents recorded where explosive weapons were used in or near schools, hospitals, and humanitarian infrastructure, causing 693 civilian casualties. Such instances have been resoundingly condemned by the UN, international organizations, and civil society as unacceptable on humanitarian grounds.<sup>33</sup>

<sup>30</sup> This pattern is in keeping with previous research conducted by Landmine Action using a six month sample which used a similar media monitoring methodology. See Richard Moyes, "Explosive Violence: The problem of explosive weapons," Landmine Action, 2009, [www.aoav.org.uk/uploads/changing\\_policy/august\\_2009\\_explosive%20violence\\_the\\_problem\\_of\\_explosive\\_weap.pdf](http://www.aoav.org.uk/uploads/changing_policy/august_2009_explosive%20violence_the_problem_of_explosive_weap.pdf) (accessed 28 February 2012).

<sup>31</sup> For information on how incidents are recorded as occurring in populated areas see Annex: Explosive Violence Project (EVMP) background.

<sup>32</sup> The EVMP divides the locations of explosive violence into a number of different categories: 'agricultural area,' 'armed base,' 'commercial premises,' 'encampment,' 'entertainment,' 'hospital,' 'hotel,' 'humanitarian infrastructure,' 'market,' 'multiple (urban),' 'place of worship,' 'police station,' 'public building,' 'public gathering,' 'public transport,' 'road,' 'school,' 'town centre,' 'transport related infrastructure,' 'urban residential,' 'village' and 'other.'

<sup>33</sup> See for example, Human Rights Watch, "No Safe Places: Yemen's Crackdown on Protests in Taizz," February 2012, [www.hrw.org/sites/default/files/reports/yemen0212webwcover.pdf](http://www.hrw.org/sites/default/files/reports/yemen0212webwcover.pdf) (accessed 8 March 2012), p. 46; UN Assistance Mission in Afghanistan (UNAMA), "United Nations condemns attack on public hospital in Logar," 25 June 2011, [unama.unmissions.org/Default.aspx?tabid=1762&ctl=Details&mid=1920&ItemID=14216](http://unama.unmissions.org/Default.aspx?tabid=1762&ctl=Details&mid=1920&ItemID=14216) (accessed 8 March 2012); Office of the United Nations High Commissioner for Refugees, "UNHCR condemns air attack on refugee camp in South Sudan," 11 November 2011, [www.unhcr.org/4ebd2f5d6.html](http://www.unhcr.org/4ebd2f5d6.html) (8 March 2012).

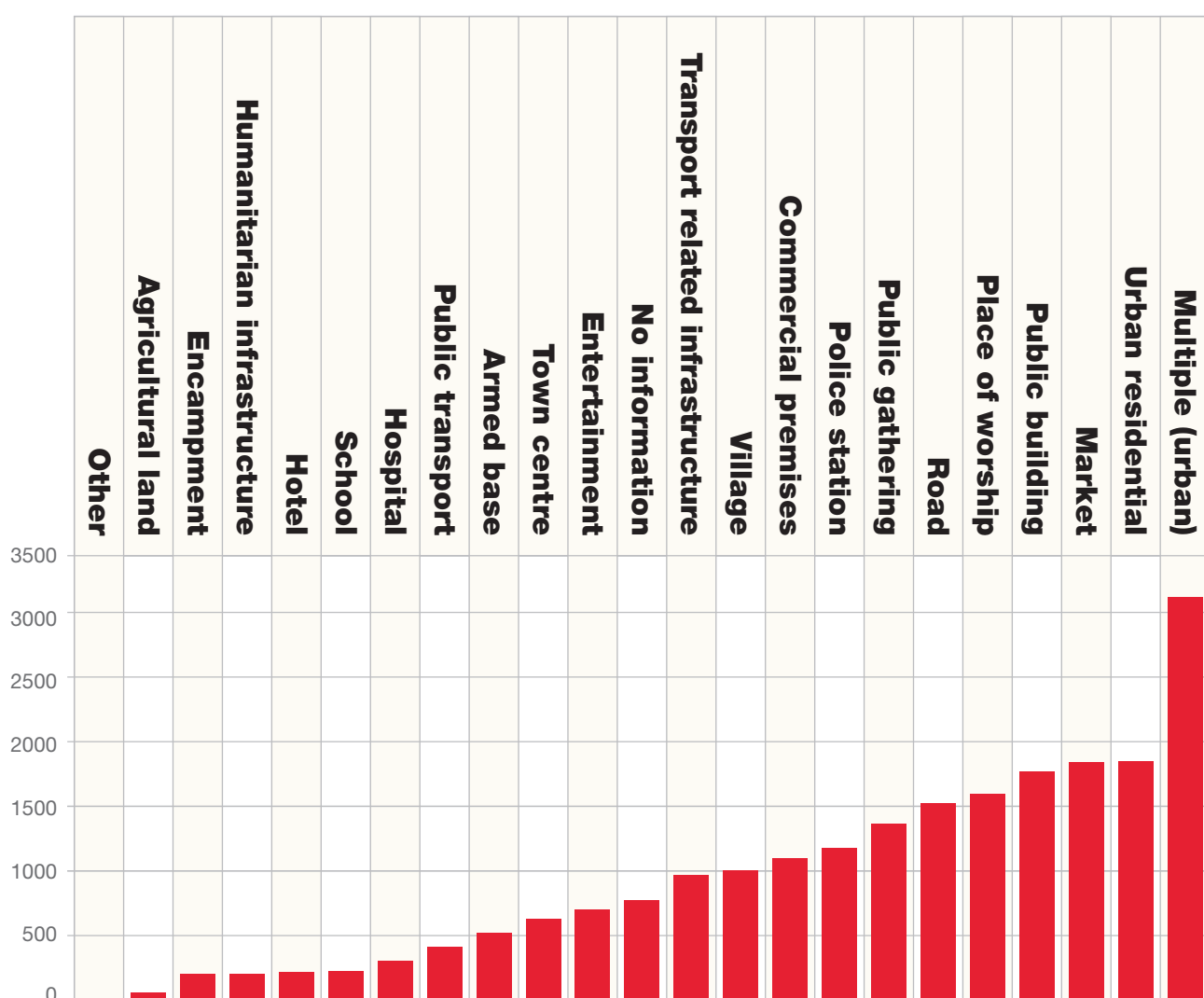


*I am gravely concerned at the shelling on Thursday of a market in the Abobo district of Abidjan that resulted in the deaths of at least 25 civilians [...] It is an alarming development in the conduct of the current hostilities and underlines the dreadful humanitarian impact of explosive weapons when used in populated areas.<sup>34</sup>*

**Baroness Valerie Amos**

Under-Secretary-General for Humanitarian Affairs and  
Emergency Relief Coordinator, 18 March 2011

Figure 5 Civilian casualties by incident location



<sup>34</sup> Baroness Valerie Amos, UN Humanitarian Chief, "United Nations Humanitarian Chief alarmed at Côte d'Ivoire violence," Office for the Coordination of Humanitarian Affairs, New York, 18 March 2011, <http://ochanet.unocha.org/p/Documents/USG%20Amos%20Statement%20CDI%2018March2011.pdf> (accessed 7 November 2011).

## DETONATION METHOD

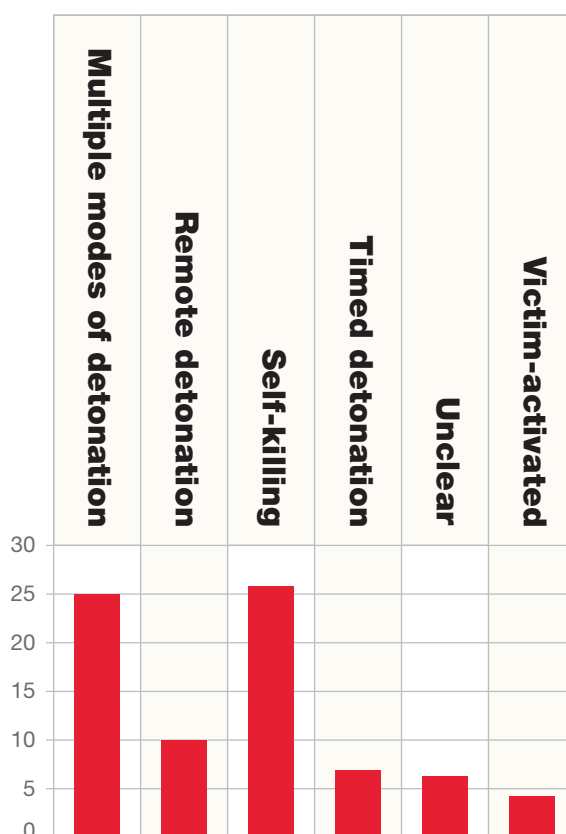
In the majority of incidents it was not possible to accurately identify the detonation method of the explosive weapon based on media reports. The EVMP recorded a clearly described mode of detonation in only 26% of incidents in 2011. However, in a number of IED attacks it was possible to establish a clear mode of detonation from news sources. *Figure 6* shows that when this was possible, attacks involving self-killing (or so-called suicide bombers)<sup>35</sup> stand out as a particular concern.

The EVMP recorded 5,107 civilians killed and injured in 190 self-killing attacks. The average number of civilian casualties per incident in these attacks was three times higher than the rest of the dataset in 2011 (an average of 27 compared to an average of 7 in other incidents), suggesting that this form of explosive violence is especially destructive. The impacts of such attacks are maximised in densely populated areas, such as amongst buildings or among crowds, where civilians are especially vulnerable to explosive violence due to factors such as close proximity to the device, lack of warning or ability to seek shelter, and blast and fragmentation impacts.

## TARGETING

The data for 2011 shows that that even when explosive weapons were used to target people perceived as armed, they still caused a high proportion of civilian casualties. While targeting could only be ascribed in 39% of incidents based on the target reported in the news sources,<sup>36</sup> in incidents reported as targeting armed actors, 49% of casualties recorded were reported to be civilians. When attacks targeting armed actors took place in populated areas, civilians made up 70% of the total recorded casualties. This fell dramatically to 21% when armed actors were the targets of explosive weapons in areas not reported as populated.

*Figure 6* Average number of civilian casualties by detonation method



<sup>35</sup> The term 'suicide bomber' may overstate the responsibility and agency of the reported attacker. This may not always be appropriate in some cases where the explosive device was triggered remotely, or may involve the coercion of vulnerable people (i.e. children or persons with mental disabilities). For example, on 1 May 2011 a 12-year-old child was reported to have detonated an explosive vest in a market place in Paktika province, Afghanistan killing at least three people. "Child suicide bomber kills four in day of Afghan clashes," AFP, 1 May 2011, [www.asiaone.com/News/AsiaOne+News/World/Story/A1Story20110501-276669.html](http://www.asiaone.com/News/AsiaOne+News/World/Story/A1Story20110501-276669.html) (accessed 6 March 2012).

<sup>36</sup> For more information on how targeting is ascribed see Annex: Explosive Violence Monitoring Project (EVMP) background.

There were also a number of instances where it was reported that the intention of the user was to kill and injure large numbers of civilians. There were 171 incidents recorded as deliberately targeting civilians, causing 4,219 civilian casualties.

The EVMP also recorded a large number of incidents where civilians were reported to be the unintended victims of state or non-state attacks. On 25 March, a NATO air strike in Helmand province in Afghanistan

was reported to have incidentally killed seven civilians, including three children. The air strike targeted a Taliban leader travelling in a vehicle but the explosion also struck the civilians travelling in a car behind.<sup>37</sup> In another incident, on 2 June, two women and two children were killed when a mortar fired by insurgents missed its target and landed on their home. The shell was part of an exchange between Taliban forces and Pakistani troops near a border post.<sup>38</sup>



Malak Al Shami, 6, who had a leg amputated after her house was hit by a Grad rocket, lies on her hospital bed in Misrata; 3 June 2011; REUTERS/Zohra Bensemra

<sup>37</sup> Ray Rivera, "NATO airstrike in Afghanistan kills 7 civilians including 3 children," *The New York Times*, 26 March 2011, [www.nytimes.com/2011/03/27/world/asia/27afghanistan.html](http://www.nytimes.com/2011/03/27/world/asia/27afghanistan.html) (accessed 17 February 2012).

<sup>38</sup> "At least 28 security officials killed in attack on border checkpoint," *Dawn*, 2 June 2011, [www.dawn.com/2011/06/02/twenty-five-pakistani-forces-killed-after-cross-border-raid.html](http://www.dawn.com/2011/06/02/twenty-five-pakistani-forces-killed-after-cross-border-raid.html) (accessed 17 February 2012).

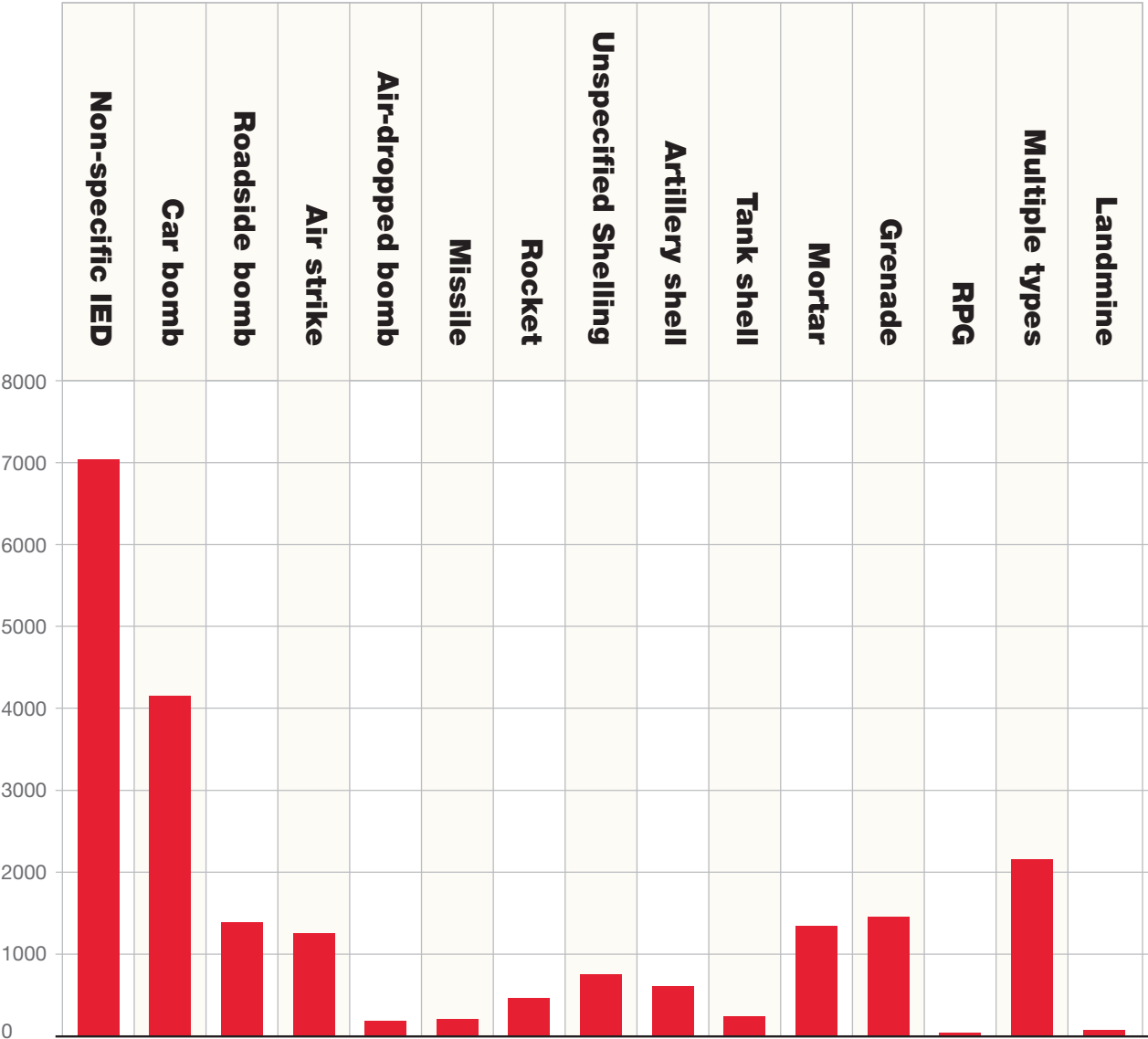


# Explosive weapons and civilian harm

In this section, explosive weapons are separated into two broad groupings in order to explore in greater detail the differing patterns of use recorded in 2011. Firstly, the report looks at manufactured

explosive ordnance—which includes weapons such as mortars, rockets and grenades—and secondly, explores patterns of use within the specific category of IEDs.

Figure 7 Civilian casualties by reported explosive weapon type



## Manufactured explosive ordnance

- Incidents involving grenades were reported in **34 different countries**.
- When air-delivered explosive weapons were used in populated areas, **four out of every five casualties** were recorded as civilians (compared to one in every five when air delivery was recorded in other areas).
- **Nine out of every ten casualties** caused by mortars were civilians.

### KEY FINDINGS

- States were responsible for 86% of manufactured explosive weapons incidents where the user could be identified.
- There were 115 incidents where non-state actors used manufactured explosive weapons. The most frequently used explosive weapon types were: grenades (31 incidents), mortars (19 incidents), rockets (19 incidents), and RPGs (17 incidents).
- Only 20% of incidents where manufactured explosive ordnance was used in populated areas were reported as air-delivered. This was compared to 79% of incidents which were ground-launched.

From shelling with artillery and mortars in besieged

cities in Libya to drone-fired missiles in Pakistan and Yemen, manufactured explosive ordnance was recorded to have caused casualties in 44 countries and territories in 2011. The term manufactured explosive ordnance is used to describe a broad range of conventional munitions that are commonly produced by commercial companies or state-owned industries.<sup>41</sup> The term does not include IEDs, but includes weapon types and ammunition that range from hand grenades to air-dropped bombs.

Manufactured explosive ordnance accounted for 42% of recorded incidents, causing 35% of the total reported civilian casualties. Where the user was reported in news sources, states—either acting alone or in exchanges of fire with other actors—were responsible for 86% of manufactured ordnance use.<sup>42</sup>

<sup>41</sup> This description is based in part on the definition of explosive ordnance in Protocol V of the 1980 UN Convention on Certain Conventional Weapons (CCW). This definition of conventional munitions containing explosives does not include IEDs, and also excludes mines and similar devices that are defined in Amended Protocol II. Landmines and antivehicle mines have not been included in this section on manufactured explosive ordnance for the purposes of analysis. In many incidents, news sources often report victim-activated IEDs as 'mines' or in ambiguous language and it is recognised that it is not clear in many incidents of 'landmine' use whether these incidents are manufactured weapons. For more detailed information on the incidents of antipersonnel and other types of mine use around the world see *The Landmine and Cluster Munition Monitor 2011*, [www.the-monitor.org/lm/2011/resources/Landmine%20Monitor%202011.pdf](http://www.the-monitor.org/lm/2011/resources/Landmine%20Monitor%202011.pdf) (accessed 28 February 2012).

<sup>42</sup> In 30% of incidents involving manufactured weapons the user was not reported in the news sources that make up the EVMP dataset. States were the recorded user in 55% of all manufactured explosive ordnance incidents.

Non-state actors predominantly used IEDs – a finding which is consistent with the fact that non-state actors are not permitted by states to have regular ordnance factories. However, the manufactured explosive weapons that were most commonly recorded as being used by non-state actors included grenades, rockets, and mortars.<sup>43</sup>

### AIR-DELIVERED EXPLOSIVE WEAPONS

The use of air-delivered explosive weapons, grenades, and mortars were the manufactured ordnance categories that were most frequently recorded by the EVMP in 2011.<sup>44</sup> In total, incidents of the use of air-delivered explosive weapons were recorded less frequently in populated areas than those that were ground-launched.

**Figure 8 Percentage of incidents in populated areas by delivery method (excluding IEDs)**

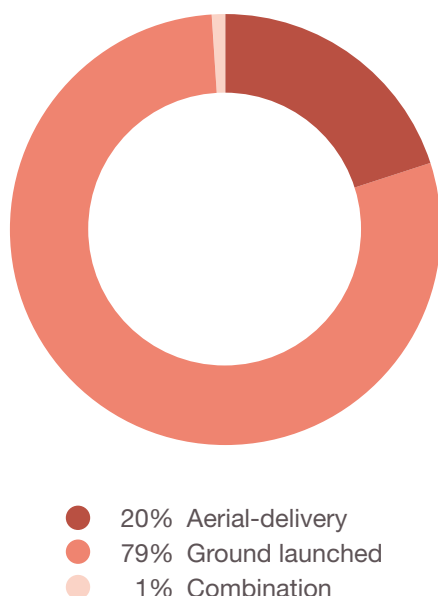


Figure 8 shows that when manufactured explosive ordnance was recorded used in populated areas, 79% of all incidents involved the use of ground-launched explosive weapons, while only 20% of such incidents involved air-delivery. It is important to note that when the use of air-delivered weapons was recorded in populated areas, it significantly increased the proportion of the resulting casualties who were civilians.

When air-delivered explosive weapons were used in populated areas, four out of every five casualties were civilians (compared to just one in five in other areas).

Drone strikes were recorded in five countries.<sup>45</sup> Drones were recorded in Somalia for the first time in 2011. In the Waziristan regions of Pakistan, drones were recorded by the EVMP at a rate of more than one incident a week. The EVMP classified all drone strikes as ‘missiles’ in its methodology. 28% of missile casualties recorded were reported as civilians in 2011. This was largely because the casualties of drone strikes were often reported as ‘suspected militants,’ a claim that could not be independently verified in most cases as the majority of drone strikes were recorded in regions where access was difficult or restricted. Figure 9 reflects the total fatalities from drone strikes in Pakistan recorded by the EVMP as compared to other organisations.

<sup>43</sup> The widespread use of grenades by non-state actors may include improvised devices that are reported in news sources as ‘grenades’ because they shared similar characteristics (i.e. were thrown by a user).

<sup>44</sup> ‘Air-delivered weapons’ includes the EVMP categories of ‘air strike’ and ‘air-dropped bomb’, as well as missiles and rockets where the munition is mentioned in news sources. See Key Terms.

<sup>45</sup> A drone is an ‘unmanned aerial vehicle’ (UAV) that can be either armed or unarmed. Armed drones are capable of firing missiles weighing up to 100lbs and are piloted remotely by operators who may be based thousands of miles away from the target. For more information see, ‘Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Philip Alston,’ United Nations General Assembly, Human Rights Council, A/HRC/14/24/Add.6, 28 May 2010, [www2.ohchr.org/english/bodies/hrcouncil/14session/reports.htm](http://www2.ohchr.org/english/bodies/hrcouncil/14session/reports.htm), (accessed 6 December 2011). Drones are included in the EVMP’s weapons category of ‘air strikes.’

<sup>46</sup> The last drone strike recorded in Pakistan was in November, after drones were reportedly suspended following an air strike which mistakenly killed 24 Pakistani soldiers on 17 November. ‘Drone Kills 10 Suspected Militants in Pakistan,’ *Sky News*, 8 February 2012, <http://news.sky.com/home/world-news/article/16165408> (accessed 12 February 2012).

<sup>47</sup> New America Foundation, ‘The Year of the Drone, An Analysis of U.S. Drone Strikes in Pakistan, 2004-2011,’ [counterterrorism.newamerica.net/drones#2011chart](http://counterterrorism.newamerica.net/drones#2011chart) (accessed 6 December 2011). This is the New America Foundation’s (NAF) high estimate figure for drone casualties in Pakistan in 2011; the NAF provides a range of estimates for fatalities from drones, from 378 to 536.

<sup>48</sup> Pakistan Body Count, [pakistanbodycount.org/analytics](http://pakistanbodycount.org/analytics), (accessed 10 February 2012).

<sup>49</sup> David Pegg, ‘All Totals Year on Year,’ *The Bureau of Investigative Journalism*, 17 November 2011, [www.thebureauinvestigates.com/2011/08/10/resources-and-graphs/all-totals-year-on-year-18/](http://www.thebureauinvestigates.com/2011/08/10/resources-and-graphs/all-totals-year-on-year-18/), (accessed 6 December 2011).

<sup>50</sup> Bill Roggio and Alexander Mayer, ‘Charting the data for US airstrikes in Pakistan, 2004-2011,’ *The Long War Journal*, [www.longwarjournal.org/pakistan-strikes.php](http://www.longwarjournal.org/pakistan-strikes.php), (accessed 6 December).

**Figure 9 Estimate of total fatalities from drones strikes in Pakistan (2011)<sup>46</sup>**

Organisation	Estimate
New America Foundation (NAF) <sup>47</sup>	536
Pakistan Body Count <sup>48</sup>	527
AOAV Explosive Violence Monitoring Project	493
The Bureau of Investigative Journalism <sup>49</sup>	470
The Long War Journal <sup>50</sup>	435

## GRENADES

- Grenades were recorded to be the most geographically widespread explosive weapon used in 2011 (after 'non-specific IEDs'). 86% of the casualties caused by grenades recorded by the EVMP were identified as civilians. This is partly explained by the frequent use of grenades in populated areas in domestic disputes, extortion demands, or other similar acts of violence, and in crowds or contained areas.
- 11% of the civilian casualties caused by grenades were recorded at the time of use as fatalities, the lowest percentage of civilian mortality of all explosive weapon types recorded.

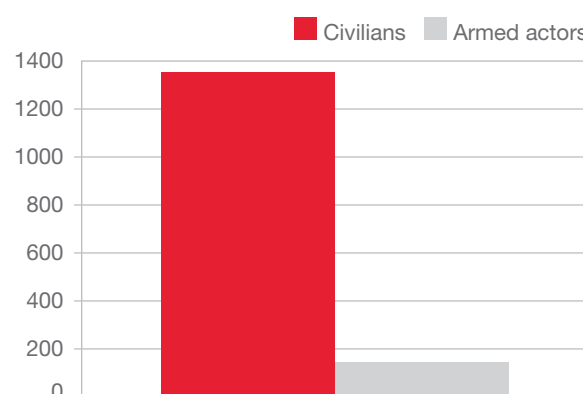
Incidents of explosive violence involving grenades were reported in 34 different countries, making grenades the most geographically widespread manufactured explosive weapon category used in 2011.<sup>51</sup> Grenades were also the manufactured weapon category most

frequently recorded used in populated areas. This pattern of grenade use indicates a significant policing challenge for many states, especially as the majority of grenade incidents in which a user was identified were reported to be carried out by non-state actors. In 2011, the EVMP recorded grenade use by non-state actors in societies that have experienced recent conflicts such as Rwanda, Guatemala, and Kosovo. Grenades were also frequently reported in contexts of domestic disputes, extortion demands, or other acts of violence in Mexico, the Philippines, and Pakistan. In one example in Pakistan, on 7 April a grenade was thrown from a motorbike into a crowded market area in Karachi, killing and injuring 21 civilians. Many of the injured were bystanders or traders selling fruit.<sup>52</sup>

## MORTARS<sup>53</sup>

- 90% (1,355) of recorded casualties from mortars in the EVMP dataset were reported as civilians. Mortars were recorded to be used in more than 100 incidents, and approximately three-quarters of their use was reported in populated areas.
- More than two-thirds of all recorded incidents of mortar use in 2011 were described in the context of plural or multiple rounds of mortar fire.

**Figure 10 Mortar casualties in 2011**



<sup>51</sup> The only explosive weapon type recorded by the EVMP in more countries than grenades in 2011 were 'non-specific IEDs,' which is a far broader descriptive category.

<sup>52</sup> "Men lob grenade at Rainbow Centre, killing 1, injuring 20 others," *The Express Tribune*, 7 April 2011, [tribune.com.pk/story/145151/blast-in-karachi-injures-eight/](http://tribune.com.pk/story/145151/blast-in-karachi-injures-eight/) (accessed 11 April 2011).

<sup>53</sup> "Mortars are generally smooth-bored indirect-fire support weapons that enable users to engage targets that are outside their line-of-sight. A mortar's high-trajectory fire makes the weapon effective against enemy positioned behind hills and other obstacles." For more information see Erich G. Berman, Pierre Gobinet, and Jonah Leff, "Mortars," Research Notes – No. 2, Small Arms Survey, February 2011, [www.smallarmssurvey.org/fileadmin/docs/H-Research\\_Notes/SAS-Research-Note-2.pdf](http://www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf) (accessed 1 March 2012).



Mortars were one of the most frequently reported explosive weapons used in 2011, and accounted for 18% of all the civilian casualties recorded from manufactured explosive ordnance. They were recorded in 14 countries and territories during the year. Pakistan and Somalia were the most affected states, but mortars also caused severe harm to civilians in other countries including Libya, Yemen, and Côte d'Ivoire.<sup>54</sup>

As shown in *Figure 10*, over the course of 2011 mortars were reported to have impacted heavily on civilians. Nine out of every ten reported casualties from mortar fire were recorded as civilians. Three-quarters of reported mortar use was in populated areas, making mortars one of the manufactured explosive weapon categories that were recorded most frequently used in populated areas.

In May, Amnesty International condemned the use of mortars and other heavy indirect-fire weaponry within populated areas in Misrata saying: *"Mortars and artillery shells are weapons meant to be used against massed infantry or armour. They are not appropriate for striking a precise target, especially in the vicinity of civilians. Neither of these weapons should ever be used in residential areas."*<sup>55</sup>

The use of mortars during the course of 2011 was often reported in a context of 'heavy shelling',<sup>56</sup> 'barage',<sup>57</sup> or the 'bombardment'<sup>58</sup> of populated areas. More than two-thirds of all recorded incidents of mortar use in 2011 were described in news sources

in the context of plural or multiple rounds that were fired simultaneously or consecutively. Mortars were often used in combination with other explosive weapons, including long-range rockets or artillery shells.<sup>59</sup> In Mogadishu, Somalia, the EVMP recorded 593 civilian casualties in 2011 from the repeated use of mortars and artillery shells within residential areas. This included the densely populated Bakara market, where in one incident, at least 14 civilians, including women and children, were killed and more than 80 injured when mortars struck as people did their shopping on 18 May.<sup>60</sup>

**Mortars are weapons that kill or maim whoever is within the impact zone after they explode and they are unable to distinguish between combatants and civilians. A decision to deploy them in a location where a large number of civilians is likely to be present, is a decision that the commander should know will result in the death and/or injuries of some of those civilians.**<sup>61</sup>

**UN International Commission of Inquiry Report on Libya, 1 June 2011**

<sup>54</sup> The fourteen countries and territories in which the EVMP recorded incidents of mortar fire causing at least one casualty were: Afghanistan, Cambodia, Côte d'Ivoire, Gaza, India, Iraq, Israel, Libya, Pakistan, Somalia, Sudan, Syria, Thailand, and Yemen.

<sup>55</sup> Amnesty International, "Misratah-Under siege and under fire," May 2011, p. 11, [www.amnesty.org/en/library/asset/MDE19/019/2011/en/4efa1e19-06c1-4609-9477-fe0f2f4e2b2a/mde190192011en.pdf](http://www.amnesty.org/en/library/asset/MDE19/019/2011/en/4efa1e19-06c1-4609-9477-fe0f2f4e2b2a/mde190192011en.pdf) (accessed 27 January 2012).

<sup>56</sup> See for example, Hassan Osman, "Deadly shelling kills more than 10 in Mogadishu," *All Voices*, 17 January 2011, [www.allvoices.com/contributed-news/7916289-deadly-shelling-kills-more-than-10-in-mogadishu](http://www.allvoices.com/contributed-news/7916289-deadly-shelling-kills-more-than-10-in-mogadishu) (accessed on 25 November 2011).

<sup>57</sup> Yaakov Lappin and JPost.com Staff, "50 mortar shells fired into Israel, 2 injured," *The Jerusalem Post*, 19 March 2011, [www.jpost.com/NationalNews/Article.aspx?id=212838](http://www.jpost.com/NationalNews/Article.aspx?id=212838) (accessed 25 November 2011).

<sup>58</sup> Laura Kasinof, "Yemen's Embattled Government Calls Cease-Fire That So Far Fails to End Violence," *The New York Times*, 25 October 2011, [www.nytimes.com/2011/10/26/world/middleeast/yemen-fighting-intensifies-as-cease-fire-is-called.html?\\_r=1&adxnnl=1&adxnnlx=1330434012-M2ZIOYz21xA/mWv+3bUpbA](http://www.nytimes.com/2011/10/26/world/middleeast/yemen-fighting-intensifies-as-cease-fire-is-called.html?_r=1&adxnnl=1&adxnnlx=1330434012-M2ZIOYz21xA/mWv+3bUpbA) (accessed 25 November 2011).

<sup>59</sup> See for example, "Libyan fighters advance on Bani Walid again," *The Associated Press*, posted by *USA Today*, 18 September 2011, [www.usatoday.com/news/world/story/2011-09-18/libya/50456446/1](http://www.usatoday.com/news/world/story/2011-09-18/libya/50456446/1) (accessed 21 September 2011) and Anwarullah Khan, "Five civilians, eight attackers killed Another intrusion from Afghan side," *DAWN*, 17 June 2011, [www.dawn.com/2011/06/17/five-civilians-eight-attackers-killed-another-intrusion-from-afghan-side.html](http://www.dawn.com/2011/06/17/five-civilians-eight-attackers-killed-another-intrusion-from-afghan-side.html) (accessed 17 June 2011). There were 46 occasions in 2011 where mortars were one of the weapon types involved in an incident where multiple explosive weapon categories were used in a single recordable incident. The EVMP recorded more than 1,000 casualties in these incidents, in countries that included Libya, Côte d'Ivoire, and Yemen. It is impossible to disaggregate casualty totals to each distinct weapon that has been used in these incidents. However, it is instructive to record that mortars were one of the weapon types that most frequently feature in an incident where multiple explosive weapon types were recorded.

<sup>60</sup> "Somalia shelling kills 14 civilians at market," *AFP* posted by *Google Hosted News*, 18 May 2011, [www.google.com/hostednews/afp/article/ALeqM5gaMhDOfhv2hNYUollorZmEnErp8g?docId=CNG.24720c3e4e4b36a7a28281c90f818eda.8f1](http://www.google.com/hostednews/afp/article/ALeqM5gaMhDOfhv2hNYUollorZmEnErp8g?docId=CNG.24720c3e4e4b36a7a28281c90f818eda.8f1) (accessed by 7 March 2012); "Somalia: 15 Killed, 80 Hurt in Mogadishu Shelling," *Shabelle Media Network* posted by *All Africa*, 18 May 2011, [allafrica.com/stories/201105190081.html](http://allafrica.com/stories/201105190081.html) (accessed 7 March 2012).

<sup>61</sup> "Report of the International Commission of Inquiry to investigate all alleged violations of international human rights law in the Libyan Arab Jamahiriya," UN Human Rights Council, A/HRC/17/44 [Advanced Unedited Version], 1 June 2011, [www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.44\\_AUV.pdf](http://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.44_AUV.pdf) (accessed 20 June 2011).

## Improvised explosive devices (IEDs)<sup>62</sup>

- **17,335** people were reported killed and injured by IEDs.
- Incidents involving IEDs were reported in **48** countries.
- **13,179 (76%)** of these casualties were civilians.
- **3,352 (25%)** of civilian casualties were fatalities.

### KEY FINDINGS

- IEDs were responsible for 60% of all recorded civilian casualties.
- IEDs were the non-state actor weapon of choice with 64% of all recorded incidents by non-state actors involving IED use.
- A well-reported pattern of IED use was in incidents which deliberately aimed to kill and injure civilians. In total, 3,376 civilians were killed and injured in these incidents.
- Car bombs had an average number of civilian casualties which was nearly ten times that of roadside bombs. The data suggests that this may be explained in part by the fact that car bombs were recorded as being used more often in populated areas (71% of incidents) compared to roadside bombs (34%).

- IEDs were seen to have a similar rate of harm in the percentage of civilian casualties as some manufactured explosive ordnance. The overall percentage of civilian casualties for IED use was 76%, compared to mortars (90%), grenades (86%), and rockets (69%).

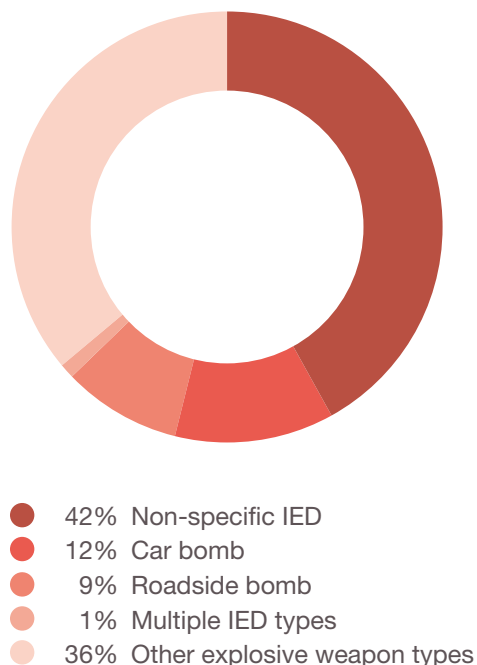
The EVMP breaks down IEDs into three different categories based on the language used in source material:

- Roadside bombs
- Car bombs
- Non-specific IEDs

IEDs were the explosive weapon of choice for non-state users of explosive weapons with 64% of all recorded incidents involving IEDs. The scale of IED use recorded and the high proportion of civilian casualties they caused make IEDs a group of explosive weapons deserving particular attention.

<sup>62</sup> There is not yet a universally agreed definition of an IED. The NATO definition is "a device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic or incendiary chemicals and designed to destroy, incapacitate, harass or distract. It may incorporate military stores, but is normally devised from non-military components." NATO Standardization Agency, "NATO Glossary of Terms and Definitions," 2008, [www.fas.org/irp/doddir/other/nato2008.pdf](http://www.fas.org/irp/doddir/other/nato2008.pdf) (accessed 28 February 2012).

**Figure 11 Types of explosive weapons used by non-state actors**



### PROPORTION OF HARM

The EVMP recorded 17,335 casualties caused by IEDs in 2011 of which 13,179 were civilians. There were 1,400 IED incidents recorded by the EVMP in 2011 in 43 different countries and territories. IED use was particularly intense in Iraq (488 incidents) and Afghanistan (400) where 57% of all civilian casualties from IEDs occurred. High numbers of incidents were also recorded in Pakistan (148), Thailand (56), and Nigeria (52).

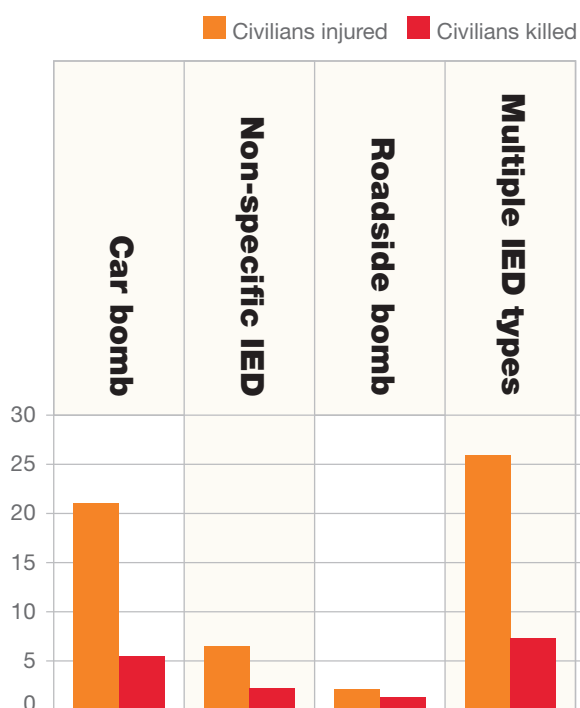
Overall, IEDs were found to be responsible for over half of all recorded explosive weapons incidents in 2011. A distinctive pattern in the use of IEDs was their use in incidents which were reported to have deliberately aimed to kill and injure large numbers of civilians. In total 3,736 civilians were recorded as killed and injured in incidents involving IEDs where the intended target of the attack were civilians.

### COMPARING IEDS

The EVMP dataset revealed variations in the harm caused by different types of IEDs. In 2011, car bombs caused particularly high numbers of civilian casualties.

Figure 12 shows that the average number of casualties from car bombs was nearly ten times that of roadside bombs. In part this was because car bombs contained large quantities of explosive material and were often used in areas likely to contain dense concentrations of civilians. Nearly three-quarters of car bomb incidents (71%) occurred in populated areas, compared to a third of roadside bomb incidents.

**Figure 12 Average number of civilians killed/injured per incident**



The most frequently recorded location of car bomb use was near police and security buildings. However, civilians still made up 67% of the recorded casualties in these incidents. For example, in one incident on 26 May, 37 people were killed and 54 were injured when a truck packed with explosives was driven into a security compound in Hangu, Pakistan. Bomb disposal experts reported that 400 kilograms of explosives were used in the blast, which left an eight-foot crater and destroyed 15 shops.<sup>63</sup>

Roadside bombs, by contrast, were frequently focused on a single moving vehicle; as a result they caused a much lower average number of casualties per incident but had a higher lethality rate. In 2011, the EVMP recorded that 37% of civilian casualties from roadside

<sup>63</sup> "Pakistan: Suicide car-bomber strikes in Hangu," *BBC*, 26 May 2011, [www.bbc.co.uk/news/mobile/world-south-asia-13565904](http://www.bbc.co.uk/news/mobile/world-south-asia-13565904) (accessed 1 March 2012).

bombs were fatalities, compared to 21% of casualties caused by car bombs. In one incident on 11 June, all 15 civilians, including eight children, traveling in a packed minivan were killed when it hit a roadside bomb in Kandahar province, Afghanistan.<sup>64</sup>

IEDs caused a pattern of harm in 2011 which was comparable to mortars, artillery, rockets, and grenades. For example, *Figure 13* demonstrates that although recorded on fewer occasions, 69% of the casualties from rockets were civilians, while 57% of casualties from roadside bombs were civilians.

## Further EVMP data

### STOCKPILE INCIDENTS AND ERW

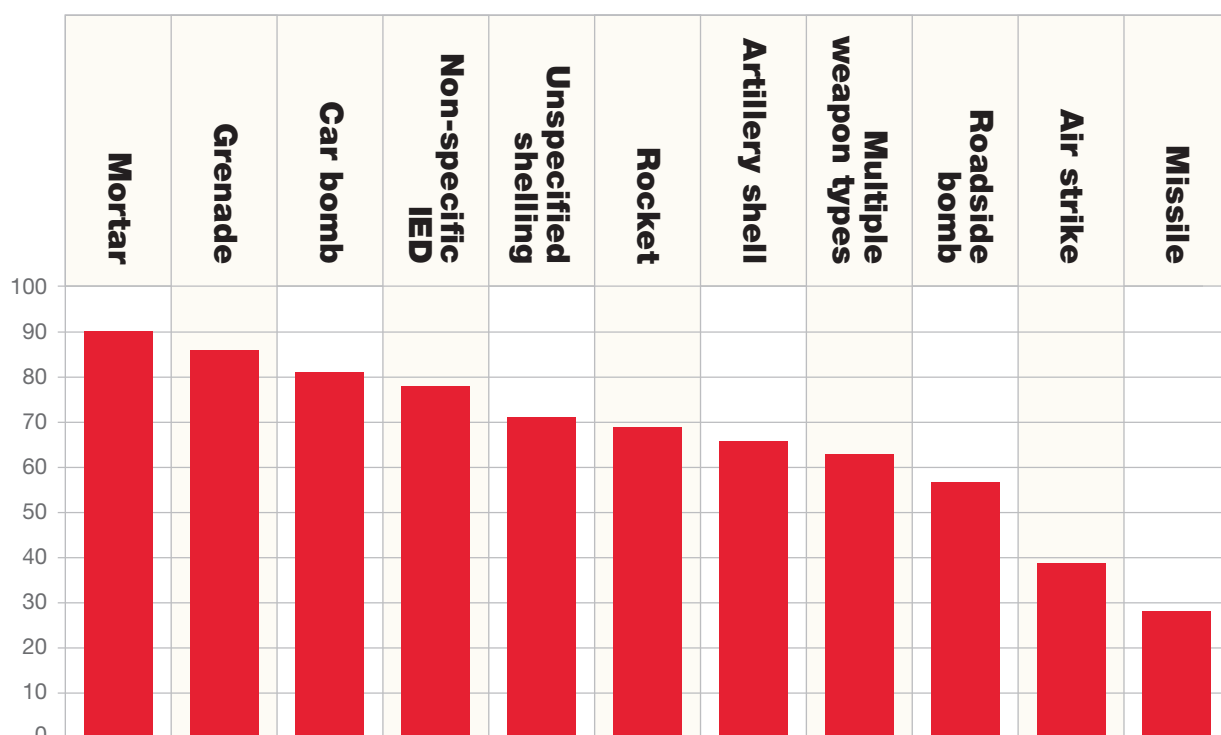
- There were 14 instances of explosions of stockpiles of explosive weapons which caused

casualties. The harm from these unintended explosions was particularly severe when they were located in populated areas.

- Unsecured and badly managed stockpiles also were reported to have elevated the risk of future proliferation of explosive weapons and materials.

Although excluded from analysis in this report which focuses on the harm from explosive weapons that was caused at the time of use, incidents in stockpiles of explosive weapons recorded by the EVMP inflicted significant harm to civilians, especially when located in populated areas. A number of incidents were recorded in 2011 when poorly managed or unsecured stockpiles exploded, killing and injuring local residents, damaging homes and infrastructure, and scattering unexploded ordnance (UXO) over a wide area.

*Figure 13* Percentage of casualties who were civilians by weapon type



<sup>64</sup> Hashmat Baktash and Laura King, "Roadside bomb kills 15 civilians," *Los Angeles Times*, 11 June 2011, [articles.latimes.com/2011/jun/11/world/la-fg-afghanistan-attack-20110612](http://articles.latimes.com/2011/jun/11/world/la-fg-afghanistan-attack-20110612) (accessed 10 February 2012).



In total the EVMP recorded 14 stockpile explosions causing casualties in 2011.<sup>65</sup> In one incident, at an ammunition storage facility in a residential suburb of Dar es Salaam, Tanzania on 16 February, at least 20 people were killed and 300 were injured in a blast that also displaced 4,000 people from their homes.<sup>66</sup> The series of explosions was reported to have lasted for three hours and rockets were projected as far as 14 kilometres away.<sup>67</sup>

Alongside the harm caused by unintended stockpile explosions in populated areas, poorly managed stockpiles present wider security threats from proliferation of explosive weapons and materials. Weakened state control of explosive weapons not only creates a situation of insecurity but, as has been seen throughout this report, presents a risk of harm to the lives of civilians. For example, mortars, rockets, and RPGs were recorded as being used by non-state groups in 55 incidents in 2011. In October, large quantities of surface-to-air missiles, tank and mortar rounds, and “guided and unguided aerial weapons” were discovered in unsecured stockpiles near Sirte in Libya.<sup>68</sup> The UN Security Council issued a resolution which expressed “*concern at the proliferation of all arms and related materiel of all types, in particular man-portable surface-to-air missiles, from Libya, in the region and its potential impact on regional and international peace and security.*”<sup>69</sup>

Explosive weapons can also continue to affect civilians long after conflicts have ended in the form of

explosive remnants of war (ERW). In 2011, the EVMP recorded 197 civilians as killed or injured by explosive weapons which had either failed to function or were abandoned. The EVMP recorded incidents in 23 countries and territories. However, the actual number of casualties is likely to be considerably higher; for example, *The Landmine and Cluster Munition Monitor*, which focuses on the impacts of landmines, cluster munitions, and ERW, recorded 1,098 casualties from ERW in 2010.<sup>70</sup>

### LONGER-TERM HARM

Longer-term impacts of the use of explosive weapons in populated areas which AOA and other organisations have discussed more extensively elsewhere,<sup>71</sup> were frequently reported in news sources. However, reporting of impacts beyond physical mortality and injury was often anecdotal and did not lend to statistical analysis. It is not possible to present an accurate reflection on the proportion of the people displaced by explosive weapons, the scale and scope of persons who suffered long-lasting psychological trauma, or harm caused through infrastructure damage, disruption to services, or other economic and social impacts from media reports.

As AOA has established in previous publications, the likelihood of deliberate or inadvertent damage to infrastructure increases when explosive weapons are used in populated areas.<sup>72</sup> Damage to vital infrastructure, properties, and public services was a distinctive feature of explosive weapons in populated areas throughout 2011.<sup>73</sup> There were 298 incidents

<sup>65</sup> By comparison Small Arms Survey recorded 35 unplanned explosions at munitions sites between 1 January and 31 October 2011, however, not all of these caused casualties. For more information on stockpile explosions see: Small Arms Survey, “Unplanned Explosions at Munitions Sites,” 2 November 2011, [www.smallarmssurvey.org/weapons-and-markets/stockpiles/unplanned-explosions-at-munitions-sites.html](http://www.smallarmssurvey.org/weapons-and-markets/stockpiles/unplanned-explosions-at-munitions-sites.html) (accessed 2 March 2012); Esther Cann and Katherine Harrison, “100 Incidents of Humanitarian Harm: Explosive weapons in populated areas, 2009-10,” Action on Armed Violence (Landmine Action), March 2011, [www.aoav.org.uk/uploads/changing\\_policy/march\\_2011\\_100\\_incidents\\_of\\_humanitarian\\_harm.pdf](http://www.aoav.org.uk/uploads/changing_policy/march_2011_100_incidents_of_humanitarian_harm.pdf) (accessed 2 March 2012).

<sup>66</sup> Gadosa Lamtey, “Vulnerable Dar in tears,” IPP Media, 18 February 2011, [www.ippmedia.com/frontend/index.php?l=26173](http://www.ippmedia.com/frontend/index.php?l=26173) (accessed 20 February 2012).

<sup>67</sup> Mines Advisory Group, “Tanzania: MAG responds to fallout from explosions in Dar es Salaam,” 9 March 2011, [www.maginternational.org/about/emergency-response/#tanzania](http://www.maginternational.org/about/emergency-response/#tanzania) (accessed 20 February 2012).

<sup>68</sup> Human Rights Watch, “Libya: Transitional Council Failing to Secure Weapons,” 25 October 2011, [www.hrw.org/news/2011/10/25/libya-transitional-council-failing-secure-weapons](http://www.hrw.org/news/2011/10/25/libya-transitional-council-failing-secure-weapons) (accessed 20 February 2012).

<sup>69</sup> Resolution S/RES/2017 (2011), adopted by United Nations Security Council at its 6644th meeting, 31 October 2011, [www.un.org/News/Press/docs/2011/sc10429.doc.htm](http://www.un.org/News/Press/docs/2011/sc10429.doc.htm) (accessed 20 February 2012).

<sup>70</sup> *The Landmine and Cluster Munition Monitor 2011, October 2011*, [www.the-monitor.org/index.php/publications/display?url=lm/2011/](http://www.the-monitor.org/index.php/publications/display?url=lm/2011/) (accessed 1 March 2012).

<sup>71</sup> See for example: Esther Cann and Katherine Harrison, “100 Incidents of Humanitarian Harm: Explosive Weapons in Populated Areas, 2009-10,” Action on Armed Violence, March 2011, [www.aoav.org.uk/uploads/changing\\_policy/march\\_2011\\_100\\_incidents\\_of\\_humanitarian\\_harm.pdf](http://www.aoav.org.uk/uploads/changing_policy/march_2011_100_incidents_of_humanitarian_harm.pdf) (accessed 28 February 2012); Richard Moyes, “Explosive Violence: The Problem of Explosive Weapons,” Landmine Action, 2009, [www.aoav.org.uk/uploads/changing\\_policy/august\\_2009\\_explosive%20violence\\_the\\_problem\\_of\\_explosive\\_weap.pdf](http://www.aoav.org.uk/uploads/changing_policy/august_2009_explosive%20violence_the_problem_of_explosive_weap.pdf) (accessed 28 February 2012).

over the course of 2011 in which damage to physical infrastructure was explicitly recorded by the EVMP. The number of incidents in which buildings and infrastructure were damaged by explosive weapons however is likely to be far higher than the 12% of total incidents in which it was clearly and specifically reported in news sources.

### LACK OF DEMOGRAPHIC INFORMATION<sup>74</sup>

Demographic information on explosive violence casualties was inconsistently provided in news sources. Women and girls were clearly reported as representing only 3% of all civilian casualties.

Children were reported as making up 5% of all civilian casualties. When child casualties were reported it was found that children were most affected by air strikes (161 casualties, 13% of all civilian casualties), roadside bombs (144 casualties, 10%), and mortars (110, 8%).

### VICTIM ASSISTANCE

The data presented in this report focuses on the immediate physical harm reported in the news sources but many more people than those who were reportedly directly killed or injured in 2011 will have experienced humanitarian harm as a result of explosive weapon use. The traumatic nature of the harm inflicted by explosive weapons often leaves

victims with severe and multiple injuries with life-long implications. Furthermore, the different types of harm victims experience, and the diversity in needs among victims is not reflected in the reports, because it is rarely reported or highlighted in the news.

One of the only aspects of victim assistance which was reported in the EVMP dataset was financial compensation.<sup>75</sup> While the provision of compensation is a positive recognition of a state's responsibility to its citizens, such compensation can be inconsistently applied, and victims in these examples noted that promises of financial support were late or insufficient.<sup>76</sup>

The needs of victims who have been harmed by incidents of explosive violence can be diverse, complex, and long-term. This reflects the need to approach redress of victimization in a holistic manner, looking to ensure that the rights of victims are fulfilled. Victim assistance includes a right to financial assistance but it should not be viewed as the end-point of a user's obligations towards victims of explosive weapons. In order to address the rights of victims in a comprehensive way, due attention must be given to improvement of access to medical and rehabilitation services, access to educational opportunities and employment, and non-discrimination.

<sup>72</sup> For a more detailed discussion see Richard Moyes, "Explosive Violence: The Problem of Explosive Weapons," Landmine Action, 2009, [www.aov.org.uk/uploads/changing\\_policy/august\\_2009\\_explosive%20violence\\_the\\_problem\\_of\\_explosive\\_weap.pdf](http://www.aov.org.uk/uploads/changing_policy/august_2009_explosive%20violence_the_problem_of_explosive_weap.pdf) (accessed 28 February 2012); Esther Cann and Katherine Harrison, "100 Incidents of Humanitarian Harm: Explosive Weapons in Populated Areas, 2009-10," Action on Armed Violence, March 2011, [www.aov.org.uk/uploads/changing\\_policy/march\\_2011\\_100\\_incidents\\_of\\_humanitarian\\_harm.pdf](http://www.aov.org.uk/uploads/changing_policy/march_2011_100_incidents_of_humanitarian_harm.pdf) (accessed 28 February 2012).

<sup>73</sup> There were 291 incidents where damage to the location was recorded by the EVMP during an incident of explosive violence. The number of incidents in which infrastructure was actually damaged by explosive weapons is likely to be far higher, as news sources tend to give higher priority to reporting the direct and immediate human cost of explosive weapons.

<sup>74</sup> There are several features of explosive weapons use which make casualty counting more difficult than incidents involving small arms. Frequently access for first-responders and journalists was difficult in the chaotic conditions following an explosive blast, particularly in populated areas where there is additional danger of collapsing buildings and further harm. Identification of the gender and age of casualties can also be made more challenging by the effects of blast and fragmentation on the body, making victims unrecognisable. The difficulties of recording the casualties of explosive violence have been discussed in more detail in 100 Incidents of Humanitarian Harm: Explosive Weapons in Populated Areas.

<sup>75</sup> In one instance, the Turkish government vowed to pay compensation to the families of 35 people who were mistakenly killed during an air strike in the village of Uludere in south-eastern Turkey on 28 December. Similarly, following the IED attacks which killed 20 people and injured 113 in Mumbai on 13 July, the local government promised to give 500,000 Indian Rupees (Rs) to the families of those who had been killed (approximately USD10,000) and Rs50,000 (USD 1,000) to the injured. "Mumbai blasts 2011: Maha CM announces compensation," *OneIndia News*, 14 July 2011, <http://news.oneindia.in/2011/07/14/mumbai-blast-2011-victims-to-get-compensation-aid0155.html>, (accessed 28 February 2012).

Currency conversions are accurate as of 3 March 2012, according to Reuters, [uk.reuters.com/business/currencies/quote?srcAmt=500000.00&srcCurr=INR&destAmt=&destCurr=USD&historicalDate=](http://uk.reuters.com/business/currencies/quote?srcAmt=500000.00&srcCurr=INR&destAmt=&destCurr=USD&historicalDate=) (accessed 3 March 2012).

<sup>76</sup> The mother of a 15-year-old boy who was killed in the Uludere strike highlighted her perception of the inadequacy of financial compensation, saying, "First they bomb my son to pieces and then they offer money? We don't want money; we want to know what happened." Zahide Encu, reported in Frederike Geerdink, "Uludere victims' families don't want compensation," *ANP* posted by *Journalistinturkey*, 4 January 2012, [www.journalistinturkey.com/stories/human-rights/uludere-victims%E2%80%99families-don%E2%80%99t-want-compensation\\_2726/](http://www.journalistinturkey.com/stories/human-rights/uludere-victims%E2%80%99families-don%E2%80%99t-want-compensation_2726/) (accessed 12 February 2012).



A man walks past the destroyed Casablanca Hotel that was bombed down by Shi'ite rebels during fighting with government forces in Saada, Yemen; 13 December 2011; REUTERS/Khaled Abdullah Ali Al Mahdi



## Case studies of explosive violence in 2011

In Libya, Syria, and Iraq, the use of explosive weapons in populated areas has been highlighted by the United Nations in 2011 as a key humanitarian concern,<sup>77</sup> and has received widespread media coverage and international outrage.

- The sustained deployment of heavy explosive weapons across cities and towns in Libya was a dominant dynamic of explosive violence in 2011. Libya was a dramatic illustration of the harm that manufactured ordnance like mortars and rockets can cause to civilians when used in populated areas. During the shelling of Misrata in March and April, the EVMP recorded more civilian casualties

in Libya than anywhere else in the world during the same time.

- In Syria, the data gathered by the EVMP suggests that the increasing use of explosive weapons over the course of 2011 can be seen as a pivotal indication of a breakdown in the legitimacy of the state.
- EVMP data shows that over the course of 2011 Iraq was the most dangerous country in the world for explosive violence, as the country where the EVMP recorded the highest number of civilian casualties in 2011.



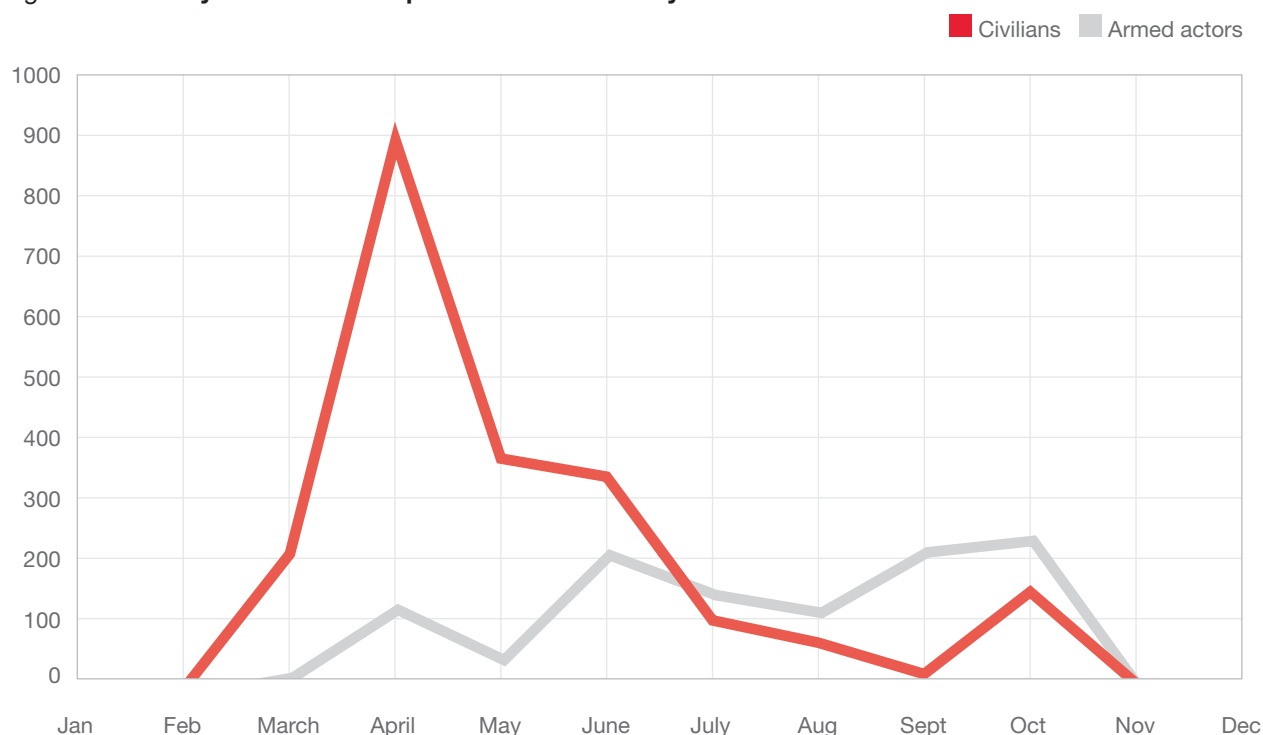
A view of a street after the heavy use of explosive weapons in Sirte, Libya; 18 October 2011; REUTERS/Esam Al-Fetori

<sup>77</sup> See for example, UN Office for the Coordination of Humanitarian Affairs, "United Nations Humanitarian Chief Highlights Humanitarian Consequences of continued fighting in Libya," 17 March 2011, [ocha.net.unocha.org/p/Documents/USG%20Amos%20Statement%20Libya%2017March2011.pdf](http://ocha.net.unocha.org/p/Documents/USG%20Amos%20Statement%20Libya%2017March2011.pdf) (accessed 6 March 2012); UN Office for the Coordination of Humanitarian Affairs, "United Nations Under-Secretary-General for Humanitarian Affairs Valerie Amos Briefing to the United Nations Security Council on Protection of Civilians," 10 May 2011, [ocha.net.unocha.org/p/Documents/Briefing%20to%20SC%20on%20POC%20-%2010%20May%202011.pdf](http://ocha.net.unocha.org/p/Documents/Briefing%20to%20SC%20on%20POC%20-%2010%20May%202011.pdf) (accessed 6 March 2012). UN Office for the Coordination of Humanitarian Affairs, "Security Council Expert Group briefed on protection of civilians in Iraq," posted by *reliefweb*, 27 June 2011, [reliefweb.int/node/437402](http://reliefweb.int/node/437402), (accessed 3 December 2011).



## Libya

Figure 14 Monthly casualties of explosive violence in Libya



**Explosive violence in Libya dominated global media attention in 2011 as thousands of civilians were killed and injured during eight months of rocket fire, shelling, and air strikes across the country.**

In a recurring pattern across Libya, the sustained use of explosive weapons in densely populated areas accounted for a significant proportion of the civilian harm recorded in 2011. Civilians made up 67% of the casualties of explosive violence in Libya recorded by the EVMP from the first incident of explosive violence recorded on 6 March when two people were killed by an air-dropped bomb in Ras Lanuf,<sup>78</sup> to the last incident in 2011 in which a man was wounded when his vehicle was struck by artillery during fighting near Tripoli on 13 November.<sup>79</sup> The vast majority of recorded civilian casualties were reported

in the first months of the conflict in Libya. The period of September and October where *Figure 14* shows a higher proportion of armed actor casualties from explosive weapons use corresponds to a period of widespread explosive violence where journalists were largely unable to access the besieged city of Sirte and the full scale of civilian harm was likely under-reported.

### SHELLING OF LIBYAN CITIES

The bombardment of densely populated areas was a key dynamic of explosive weapon use in Libya in 2011, and in some areas of the country has caused considerable damage and disruption to civilian infrastructure, properties, and livelihoods.<sup>80</sup> During and after the shelling of Misrata, the city was at times left without power or water, and access to humanitarian aid was blocked by the shelling of the port.<sup>81</sup> In April,

<sup>78</sup> "Libyan warplanes bomb oil-rich towns," *Press TV*, 6 March 2011, [www.presstv.ir/detail/168493.html](http://www.presstv.ir/detail/168493.html) (accessed 8 March 2011).

<sup>79</sup> Ramal Al-Shaheibi, "Rival Libyan militias clash near military base," *The Associated Press* posted by *Yahoo! News Singapore*, 14 November 2011, [sg.news.yahoo.com/rival-libyan-militias-clash-near-military-132722966.html](http://sg.news.yahoo.com/rival-libyan-militias-clash-near-military-132722966.html) (accessed 6 March 2012).

<sup>80</sup> Ryan Lucas, "Daily life begins to return to Libya's Misrata," *The Associated Press* posted by *ABC News*, 23 May 2011, [abcnews.go.com/International/wireStory?id=13663121#.T0zleldOguc](http://abcnews.go.com/International/wireStory?id=13663121#.T0zleldOguc) (accessed 10 February 2012).

<sup>81</sup> C.J. Chivers, "Qaddafi Troops Fire Cluster Bombs Into Civilian Areas," *The New York Times*, 15 April 2011, [www.nytimes.com/2011/04/16/world/africa/16libya.html?pagewanted=all](http://www.nytimes.com/2011/04/16/world/africa/16libya.html?pagewanted=all) (accessed 13 February 2012).

a third of all the civilian casualties reported in Libya were recorded during a period when Misrata was shelled with rockets, mortars, artillery shells, and cluster munitions.<sup>82</sup> On 20 April alone, 128 civilians were reportedly killed and injured in heavy mortar and RPG fire in the city.<sup>83</sup> In September, a journalist witnessing similarly intense exchanges of explosive weapons in the city of Sirte described:

***A blizzard of flying metal as [...] the architecture of the city was destroyed, minute by minute, in front of our eyes [...] Multi-barrelled rocket launchers were fired horizontally down the street by both sides.*<sup>84</sup>**

**Tom Coghlan**  
*The Times*, September 2011

## GRAD ROCKETS

Grad rockets were used in both Misrata and Sirte, as well as in towns in the Nafusa mountain area. On 14 April, at least 80 Grad rockets were fired into the city of Misrata by Gaddafi forces. In a two-hour barrage that morning, 23 people were killed. Rockets struck a medical clinic and civilian homes, and eight people were killed as they queued outside a bakery, including a mother and her two daughters. Amnesty International witnesses described the Grad assault as *“literally raining down on the area.”*<sup>85</sup>

Grad rockets are nearly three metres long, and have been described as *“an inherently indiscriminate weapon in populated areas.”*<sup>86</sup> In just a few minutes, hundreds of these unguided rockets can be fired across a range of up to 40km and cover wide areas. Peter Bouckaert, Emergencies Director at Human Rights Watch, described how *“Libyan government forces have repeatedly fired mortars and Grad rockets into residential neighbourhoods in Misrata, causing civilian casualties. The Soviet-made Grad in particular is one of the world's most inaccurate rocket systems and should never be fired in areas with civilians.”*<sup>87</sup>

## NATO AIR STRIKES AND CASUALTY RECORDING

NATO and international forces<sup>88</sup> conducted a campaign of air strikes across Libya following the adoption of United Nations Security Council Resolution 1973, which was specifically rooted in the protection of civilians and civilian populated areas.<sup>89</sup> During the course of its operation, NATO carried out more than 9,700 strike sorties between March and October.<sup>90</sup>

NATO has been inconsistent in its position regarding acknowledgement of civilian casualties. In June, a NATO spokesman acknowledged that an air strike may have caused civilian casualties after a technical failure meant that a weapon missed its target.<sup>91</sup> In November, NATO Secretary General Anders Fogh Rasmussen asserted in response to questioning that there were *“no confirmed civilian casualties caused by NATO.”*<sup>92</sup> The New York Times has since conducted an examination of some of the sites in which air strikes were reported in Libya, and found evidence at

<sup>82</sup> Amnesty International, “Misratah-Under Siege And Fire,” May 2011, [www.amnesty.org/en/library/asset/MDE19/019/2011/en/4efa1e19-06c1-4609-9477-fe0f2f4e2b2a/mde190192011en.pdf](http://www.amnesty.org/en/library/asset/MDE19/019/2011/en/4efa1e19-06c1-4609-9477-fe0f2f4e2b2a/mde190192011en.pdf) (accessed 11 May 2011).

<sup>83</sup> Xan Rice and Peter Walker, “Misrata mortar attacks kill at least 15 civilians,” *The Guardian*, 21 April 2011, [www.guardian.co.uk/world/2011/apr/21/misrata-mortar-attacks-civilians](http://www.guardian.co.uk/world/2011/apr/21/misrata-mortar-attacks-civilians) (accessed 21 April 2011).

<sup>84</sup> Tom Coghlan, “Shrapnel flies in the battle for Libya’s Sirte,” *The Times* posted by *The Australian*, 27 September 2011, [www.theaustralian.com.au/news/world/shrapnel-flies-in-the-battle-for-libyas-sirte/story-e6frg6so-1226147261670](http://www.theaustralian.com.au/news/world/shrapnel-flies-in-the-battle-for-libyas-sirte/story-e6frg6so-1226147261670) (accessed 27 January 2012).

<sup>85</sup> Amnesty International, “Misratah-Under Siege And Fire,” May 2011, [www.amnesty.org/en/library/asset/MDE19/019/2011/en/4efa1e19-06c1-4609-9477-fe0f2f4e2b2a/mde190192011en.pdf](http://www.amnesty.org/en/library/asset/MDE19/019/2011/en/4efa1e19-06c1-4609-9477-fe0f2f4e2b2a/mde190192011en.pdf) (accessed 11 May 2011).

<sup>86</sup> Human Rights Watch, “Libya: Rocket Attacks on Western Mountain Towns,” 27 May 2011, [www.hrw.org/news/2011/05/27/libya-rocket-attacks-western-mountain-towns](http://www.hrw.org/news/2011/05/27/libya-rocket-attacks-western-mountain-towns) (accessed 28 February 2012).

<sup>87</sup> Human Rights Watch, “Libya: Indiscriminate Attacks Kill Civilians,” 17 April 2011, [www.hrw.org/news/2011/04/17/libya-indiscriminate-attacks-kill-civilians](http://www.hrw.org/news/2011/04/17/libya-indiscriminate-attacks-kill-civilians) (accessed 28 February 2012).

<sup>88</sup> NATO took control of military operations in Libya on 31 March 2011. An international coalition including US, UK and French forces, had carried out air strikes in Libya before that date as part of Operation Odyssey Dawn. NATO, “NATO and Libya - Operation Unified Protector,” [www.nato.int/cps/en/SID-3E417BE6-55D7C260/natolive/topics\\_71652.htm?](http://www.nato.int/cps/en/SID-3E417BE6-55D7C260/natolive/topics_71652.htm?) (accessed on 20 January 2012).

<sup>89</sup> UN Security Council Resolution 1973 (2011), adopted by the Security Council at its 6498th meeting, 17 March 2011, S/RES/1973, [www.un.org/Docs/sc/unscl\\_resolutions11.htm](http://www.un.org/Docs/sc/unscl_resolutions11.htm) (accessed 13 February 2012).

<sup>90</sup> According to NATO information, “strike sorties are intended to identify and engage appropriate targets, but do not necessarily deploy munitions each time.” NATO, “Operation Unified Protector, Final Mission Stats,” 2 November 2011, [www.nato.int/nato\\_static/assets/pdf/pdf\\_2011\\_11/20111108\\_111107-factsheet\\_up\\_factsfigures\\_en.pdf](http://www.nato.int/nato_static/assets/pdf/pdf_2011_11/20111108_111107-factsheet_up_factsfigures_en.pdf) (accessed 19 January 2011).

<sup>91</sup> Wing Commander Mike Bracken, quoted in “NATO suggests ‘weapons systems failure’ in Tripoli raid,” *BBC*, 20 June 2011, [www.bbc.co.uk/news/world-africa-13833752](http://www.bbc.co.uk/news/world-africa-13833752) (accessed 22 June 2011). Investigations subsequently carried out by *The New York Times* in the location of the missile strike that took place on 19 June have found evidence of the deaths of five family members, but has not confirmed the nine casualties that were reported in news-sources at the time of use. C.J. Chivers and Eric Schmitt, “In Strikes on Libya by NATO, an Unspoken Civilian Toll,” *The New York Times*, 17 December 2011, [www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all](http://www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all) (accessed 19 January 2012).

these locations that more than 70 people may have been killed by NATO air strikes, including 29 women or children.<sup>93</sup> NATO acknowledged in response to this investigation that air strikes may have killed or injured civilians.<sup>94</sup> However, NATO deferred the responsibility of establishing civilian casualties from its air strikes to the interim authorities in Libya, who themselves stated that they saw no need for an investigation.<sup>95</sup> In February 2012, the United Nations criticised NATO for not investigating civilian casualties from its air strikes, despite the reports and evidence gathered through on-the-ground investigations since the end of NATO's operation in Libya.<sup>96</sup>

States and civil society have consistently called for NATO to record transparently the impacts of their intervention.<sup>97</sup> Accurate and timely data is necessary to inform the identification of possible unexploded ordnance, as well as shaping appropriate responses to the needs of victims of air strikes. Furthermore, with NATO describing its operation in Libya as a success,<sup>98</sup> analysts predict that states may treat the intervention as a template for future action.<sup>99</sup> Without appropriate data on the incidence and impacts

of explosive weapons, and without a transparent mechanism for recording the casualties of air strikes, it is not possible to assess the full impact of NATO's intervention in Libya accurately.

***In Libya, NATO's inattention to its unintended victims has also left many wounded civilians with little aid in the aftermath of the country's still-chaotic change in leadership. These victims include a boy blasted by debris in his face and right eye, a woman whose left leg was amputated, [and] another whose foot and leg wounds left her disabled [...]***<sup>100</sup>

**C.J. Chivers and Eric Schmitt**  
*The New York Times*,  
 17 December 2011

<sup>92</sup> NATO Secretary General Anders Fogh Rasmussen, quoted in NATO, "Monthly Press Briefing," 3 November 2011, [www.nato.int/cps/en/natolive/opinions\\_80247.htm](http://www.nato.int/cps/en/natolive/opinions_80247.htm) (accessed 23 January 2012). According to a *New York Times* investigative report, NATO's practice was to only confirm casualties following its own independent corroboration, and that "because the alliance declined to investigate allegations, its casualty total by definition could not budge—from zero." During the campaign, the Commander of NATO's operation in Libya admitted in May that NATO's main source of information on the impacts of their air strikes came from the media present on the ground. See: C. J. Chivers and Eric Schmitt, "In Strikes on Libya by NATO, an Unspoken Civilian Toll," *The New York Times*, 17 December 2011, [www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all](http://www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all) (accessed 19 January 2012) and remarks by Lieutenant Commander Charles Bouchard, Commander of the NATO Military Operation 'Unified Protector,' quoted in NATO, "Transcript of the press briefing on Libya," 27 May 2011, [www.nato.int/cps/en/natolive/opinions\\_74826.htm](http://www.nato.int/cps/en/natolive/opinions_74826.htm) (accessed 16 June 2011). Bouchard is quoted as saying, "I do not have exact numbers of the casualties in the area, because, in fact, our main source of information in terms of casualties in the area are provided by the media that is present in those areas."

<sup>93</sup> *The New York Times*' investigation analysed incidents at 25 sites where air strikes had been reported, and was not a full accounting of casualties from air strikes in the country. C. J. Chivers and Eric Schmitt, "In Strikes on Libya by NATO, an Unspoken Civilian Toll," *The New York Times*, 17 December 2011, [www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all](http://www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all) (accessed 19 January 2012). The EVMP recorded 223 civilian fatalities reported in the immediate aftermath of air strike incidents carried out in Libya by NATO and international forces between 9 March and 20 October 2011. The figure is likely to be a high estimate of the civilian fatalities from air strikes as it includes media reports of Libyan government and pro-Gaddafi figures suspected to be deliberately inflated. The wide variance in claims regarding civilian casualties from air strikes gives cause for concern that many were politically motivated. For example, in June 2011 the Libyan government alleged that more than 700 civilians had been killed. See for example, Imed Lamoum, "Libya says NATO raids killed 718 civilians so far," *AFP* posted by *The Indian Express*, 1 June 2011, [www.indianexpress.com/news/nato-raids-have-killed-718-civilians-libya/797978/](http://www.indianexpress.com/news/nato-raids-have-killed-718-civilians-libya/797978/) (accessed 5 December 2011) and Ivan Watson, "Reporters taken to mass funeral in Libyan town, nearby hospital," *CNN*, 10 August 2011, [edition.cnn.com/2011/WORLD/africa/08/09/libya.zlitan/](http://edition.cnn.com/2011/WORLD/africa/08/09/libya.zlitan/) (accessed 10 August 2011).

<sup>94</sup> Oana Longescu, NATO Spokesperson, quoted in C. J. Chivers and Eric Schmitt, "In Strikes on Libya by NATO, an Unspoken Civilian Toll," *The New York Times*, 17 December 2011, [www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all](http://www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all) (accessed 19 January 2012).

<sup>95</sup> "NATO urged to probe civilians killed in Libya war," *Reuters*, 16 December 2011, [af.reuters.com/article/libyaNews/idAFL1E7NG04W20111216?sp=true](http://af.reuters.com/article/libyaNews/idAFL1E7NG04W20111216?sp=true) (accessed 19 January 2012).

<sup>96</sup> In June 2011, the British Government, a NATO member, made commitments that: "Any reports that civilians have died as a result of NATO airstrikes will be carefully investigated." Alistair Burt, Parliamentary Under-Secretary of State at the Foreign & Commonwealth Office, letter to Chris Langdon, Managing Director of Oxford Research Group, reference: MIN/14480/2011, dated June 2011. The Italian Foreign Minister stated in June 2011 that "With regard to Nato, it is fair to ask for increasingly detailed information on results as well as precise guidelines on the dramatic errors involving civilians," Franco Frattini, cited in "Libya conflict: Italy urges suspension of hostilities," *BBC*, 22 June 2011, [www.bbc.co.uk/news/mobile/world-africa-13872674](http://www.bbc.co.uk/news/mobile/world-africa-13872674) (accessed 6 March 2012).

<sup>97</sup> "Libya conflict: Italy urges suspension of hostilities," *BBC*, 22 June 2011, [www.bbc.co.uk/news/mobile/world-africa-13872674?SThisEM](http://www.bbc.co.uk/news/mobile/world-africa-13872674?SThisEM) (accessed 22 June 2011).

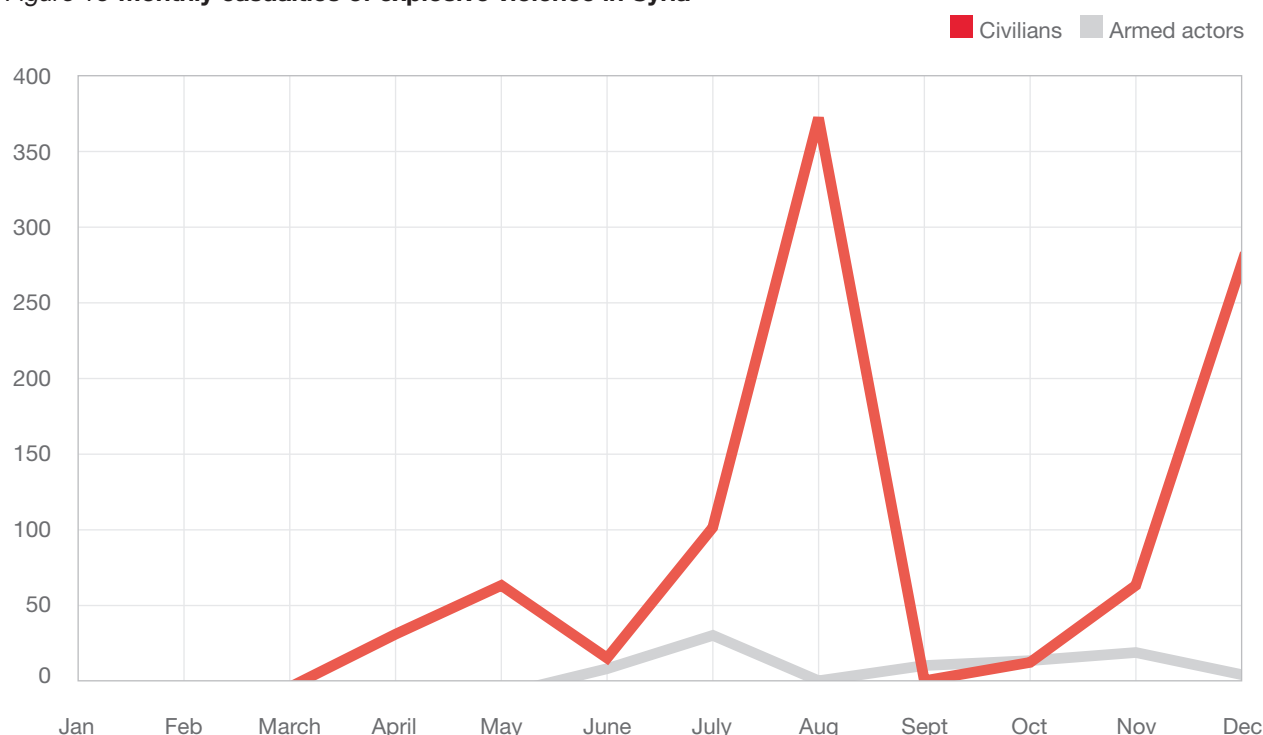
<sup>98</sup> NATO, "NATO and Libya - Operation Unified Protector," [www.nato.int/cps/en/SID-3E417BE6-55D7C260/natolive/topics\\_71652.htm](http://www.nato.int/cps/en/SID-3E417BE6-55D7C260/natolive/topics_71652.htm) (accessed on 20 January 2012).

<sup>99</sup> Tarak Barkawi, Senior Lecturer at the Centre of International Studies, University of Cambridge, "Intervention without responsibility," *Al Jazeera*, 23 November 2011, [www.aljazeera.com/indepth/opinion/2011/11/20111121161326433590.html](http://www.aljazeera.com/indepth/opinion/2011/11/20111121161326433590.html) (accessed 23 January 2012).

<sup>100</sup> C. J. Chivers and Eric Schmitt, "In Strikes on Libya by NATO, an Unspoken Civilian Toll," *The New York Times*, 17 December 2011, [www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all](http://www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html?pagewanted=all) (accessed 19 January 2012).

## Syria

Figure 15 Monthly casualties of explosive violence in Syria



Since protests against the government began in February, the use of heavy explosive weapons by the Syrian state against its own population has caused international outrage. As the year progressed, the spread of explosive violence across the country has indicated a deepening crisis in the perceived legitimacy of the state.

### CITIES BESIEGED

The highest numbers of civilian casualties from explosive violence in Syria in 2011 were reported between 31 July and 7 August. During this week, 336 civilian casualties were recorded as the Syrian state used tanks and heavy artillery to shell residential areas in the cities of Hama and Deir-ez Zour.<sup>101</sup> On 31 July, during some of the most severe shelling, people living

in Hama described how houses were “*flattened to the ground*”<sup>102</sup> as tank shells fell across the city at a rate of four per minute.<sup>103</sup> One resident described how the city’s three hospitals were overwhelmed by the numbers of casualties, and had run out of supplies of blood needed to treat the wounded.<sup>104</sup>

At different points throughout the year residents of Syrian cities, towns, and villages have been under siege as tanks surround neighbourhoods protests have taken place.<sup>105</sup> On 15 August, naval ships and tanks were deployed around the port city of Latakia along the western coast, where residents reported that civilians were trapped as they tried to flee attacks from land and sea.<sup>106</sup> Among the residential areas shelled within Latakia was a Palestinian refugee camp, displacing more than 5,000 already displaced people.<sup>107</sup>

<sup>101</sup> “Deadly Syrian crackdown continues,” *Al Jazeera*, 1 August 2011, [www.aljazeera.com/news/middleeast/2011/08/20118153040657423.html](http://www.aljazeera.com/news/middleeast/2011/08/20118153040657423.html), (accessed 1 August 2011).

<sup>102</sup> Joe Lauria and Nour Malas, “U.N. Condemns Syria as Hama Shelled,” *The Wall Street Journal*, 4 August 2011, [online.wsj.com/article/SB10001424053111903366504576485982150961312.html](http://online.wsj.com/article/SB10001424053111903366504576485982150961312.html), (accessed 31 October 2011).

<sup>103</sup> “Syrian tank assault on Hama ‘kills 95,’” *Channel 4 News*, 31 July 2011, [www.channel4.com/news/syrian-tank-assault-on-hama-kills-45](http://www.channel4.com/news/syrian-tank-assault-on-hama-kills-45), (accessed 31 October 2011).

<sup>104</sup> “Syrian unrest: Hama army raid kills dozens,” *BBC*, 31 July 2011, [www.bbc.co.uk/news/world-14356722](http://www.bbc.co.uk/news/world-14356722), (accessed 18 January 2012).

<sup>105</sup> “Report of the United Nations High Commissioner for Human Rights on the situation of human rights in the Syrian Arab Republic,” UN General Assembly Human Rights Council, A/HRC/18/53, 15 September 2011, p.24, [www.ohchr.org/Documents/countries/SY/Syria\\_Report\\_2011-08-17.pdf](http://www.ohchr.org/Documents/countries/SY/Syria_Report_2011-08-17.pdf) (accessed 28 February 2012).

Residents of Homs were repeatedly attacked by explosive weapons in 2011, including the reported use of mortars within the city in December.<sup>108</sup> The first incident reported in Homs took place on 11 May. More than 100 tanks were reported on 10 May,<sup>109</sup> and widespread shelling the next day killed nine people and damaged the main shopping area.<sup>110</sup> Six months later, on 15 November, more than 50 shells fell across the residential neighbourhood of Baba Amr, killing and injuring 32 civilians and setting homes on fire.<sup>111</sup> This pattern was repeated throughout the year and in populated areas across the country.

### DEEPENING CRISIS IN SYRIA

On 23 December, 44 people were killed when two car bombs exploded outside security buildings in the center of the capital city Damascus. The two IEDs, each reportedly containing more than 300 kilogrammes of explosives,<sup>112</sup> also injured more than 150 people. The incident was the first since protests began in which IEDs caused large numbers of civilian casualties, and is part of an evident escalation in the frequency and impact of non-state use of explosive weapons in Syria. In addition to the attack in Damascus, a further seven incidents in which IEDs caused casualties were reported in the country between October and December, compared to two in the preceding eight months since protests began in the country in February.

Non-state use of explosive weapons became increasingly frequent in Syria in 2011. The first incident of non-state use in which casualties were reported took place on 30 May, when four people were killed by RPG and gunfire clashes between security forces and residents of the towns of Talbiseh and Rastan.<sup>113</sup> RPG attacks on state buildings were also reported in Damascus in November.<sup>114</sup> Analysts have claimed that the repressive violence carried out by the Syrian state has contributed directly to the development of an increasingly armed reaction.<sup>115</sup> The use of explosive weapons in particular by non-state actors has been repeatedly associated with a wider deterioration in security conditions in the country.<sup>116</sup> In October 2011, the UN High Commissioner for Human Rights called attention to the Syrian state's use of explosive weapons against its own population and voiced concerns that the country could further descend into a state of armed conflict.<sup>117</sup>

The dynamics of explosive violence in Syria in 2011 suggest a correlation between a state's use of explosive weapons within the civilian population to whom it is directly accountable, and a consequent loss of legitimacy. As the situation continued to deteriorate and the intensity and frequency of explosive weapon use increased significantly in early 2012, a number of senior government and UN officials began to warn of a descent into full-scale civil war.<sup>118</sup>

<sup>108</sup> Khaled Yacoub Oweis, "Syrian tanks shell Latakia, death toll reaches 31," *Reuters*, 15 August 2011, [www.reuters.com/article/2011/08/15/us-syria-idUSTRE77D0LP20110815](http://www.reuters.com/article/2011/08/15/us-syria-idUSTRE77D0LP20110815), (accessed 1 November 2011).

<sup>109</sup> Mustapha Ajbaili, "Palestinians flee refugee camp in Latakia under fire from Syrian troops," *Al Arabiya*, 16 August 2011, [www.alarabiya.net/articles/2011/08/15/162373.html](http://www.alarabiya.net/articles/2011/08/15/162373.html), (accessed 1 November 2011).

<sup>110</sup> Erika Solomon, "Carnage in Homs district as tanks open fire- video," *Reuters*, 26 December 2011, [www.trust.org/alertnet/news/carnage-in-homs-district-as-tanks-open-fire-video/](http://www.trust.org/alertnet/news/carnage-in-homs-district-as-tanks-open-fire-video/), (accessed 17 January 2012).

<sup>111</sup> "No momentum yet for Syrian uprising," *Sky News*, 11 May 2011, [blogs.news.sky.com/foreignmatters/Post:d3d09ed5-a39a-498b-a1cb-f628f260dfaa](http://blogs.news.sky.com/foreignmatters/Post:d3d09ed5-a39a-498b-a1cb-f628f260dfaa), (accessed 18 May 2011).

<sup>112</sup> "Syria tanks 'shell' protest city of Homs," *BBC*, 11 May 2011, [www.bbc.co.uk/news/world-middle-east-13358201](http://www.bbc.co.uk/news/world-middle-east-13358201), (accessed 18 May 2011).

<sup>113</sup> "Syrian forces shell areas in restive province, activists say," *DPA*, 15 November 2011, [www.monstersandcritics.com/news/middleeast/news/article\\_1675239.php/Syrian-forces-shell-areas-in-restive-province-activists-say](http://www.monstersandcritics.com/news/middleeast/news/article_1675239.php/Syrian-forces-shell-areas-in-restive-province-activists-say), (accessed 16 November 2011).

<sup>114</sup> Albert Aji and Bassem Mroue, "Twin suicide bombs shake Syrian capital, kill 44," *The Associated Press* posted by *Yahoo! News*, 23 December 2011, [news.yahoo.com/twin-suicide-bombs-shake-syrian-capital-kill-44-212354803.html](http://news.yahoo.com/twin-suicide-bombs-shake-syrian-capital-kill-44-212354803.html), (accessed 3 January 2012).

<sup>115</sup> Zeina Karam, "Armed residents fight off Syrian government troops," *The Associated Press* posted by *Boston.com*, 31 May 2011, [articles.boston.com/2011-05-31/news/29604678\\_1\\_president-bashar-assad-government-troops-rifles-and-rocket-propelled-grenades](http://articles.boston.com/2011-05-31/news/29604678_1_president-bashar-assad-government-troops-rifles-and-rocket-propelled-grenades), (accessed 31 May 2011).

<sup>116</sup> Nada Bakri, "New Phase for Syria in Attacks on Capital," *The New York Times*, 20 November 2011, [www.nytimes.com/2011/11/21/world/middleeast/insurgents-attack-baath-party-offices-in-damascus.html](http://www.nytimes.com/2011/11/21/world/middleeast/insurgents-attack-baath-party-offices-in-damascus.html), (accessed 1 December 2011).

<sup>117</sup> International Crisis Group, "Uncharted Waters: Thinking Through Syria's Dynamics," Middle East Briefing No 31, 24 November 2011, [www.crisisgroup.org/en/regions/middle-east-north-africa/egypt-syria-lebanon/syria/B031-uncharted-waters-thinking-through-syrias-dynamics.aspx](http://www.crisisgroup.org/en/regions/middle-east-north-africa/egypt-syria-lebanon/syria/B031-uncharted-waters-thinking-through-syrias-dynamics.aspx), (accessed 29 November 2011).

<sup>118</sup> See for example Zeina Karam, "Armed residents fight off Syrian government troops," *The Associated Press* posted by *Boston.com*, 31 May 2011, [articles.boston.com/2011-05-31/news/29604678\\_1\\_president-bashar-assad-government-troops-rifles-and-rocket-propelled-grenades](http://articles.boston.com/2011-05-31/news/29604678_1_president-bashar-assad-government-troops-rifles-and-rocket-propelled-grenades), (accessed 31 May 2011); Liz Sly, "Defectors from Syrian army attack military facilities," *The Washington Post*, 16 November 2011, [www.washingtonpost.com/world/middle\\_east/defector-from-syrian-army-attack-military-facilities/2011/11/16/gIQAKitzQN\\_story.html](http://www.washingtonpost.com/world/middle_east/defector-from-syrian-army-attack-military-facilities/2011/11/16/gIQAKitzQN_story.html), (accessed 18 January 2012).

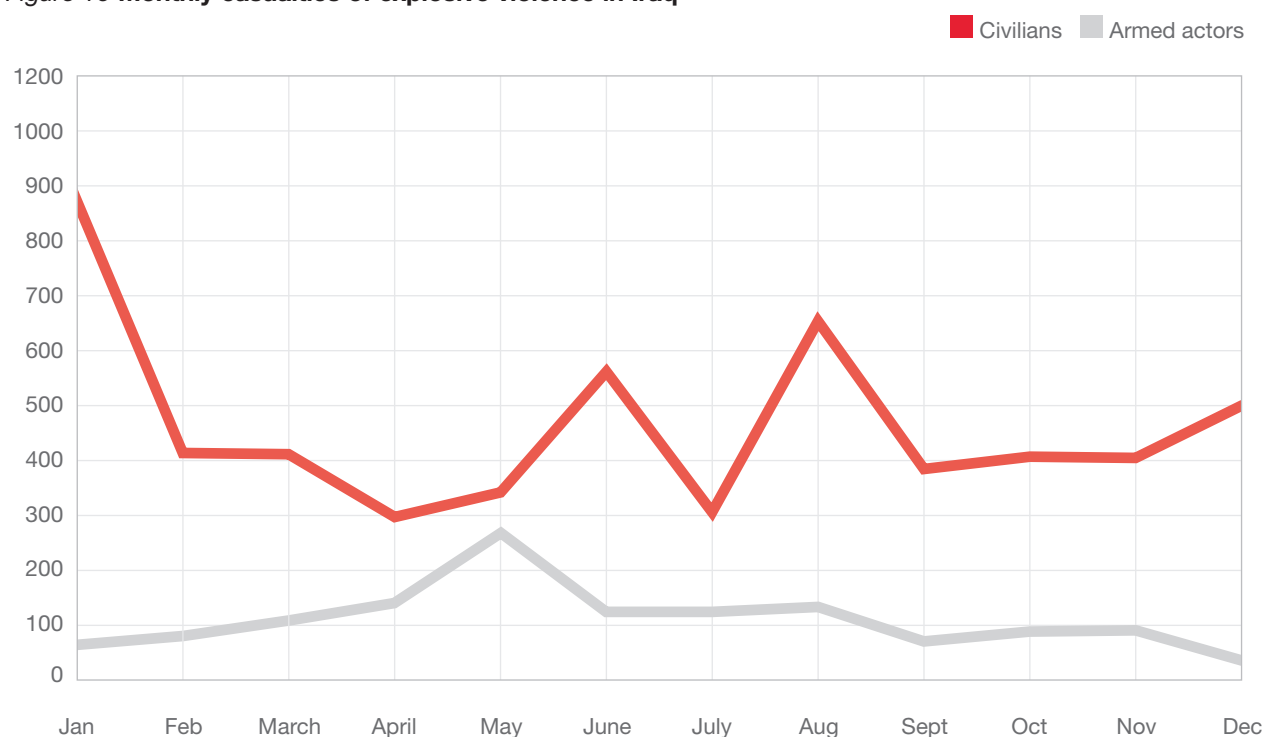
<sup>117</sup> Office of the High Commissioner for Human Rights, "Pillay urges united international action to protect Syrians," Geneva, 14 October 2011, [www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=11493&LangID=E](http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=11493&LangID=E), (14 October 2011).

<sup>118</sup> See for example, David Cameron, "Syria at risk of civil war, Cameron warns," *BBC*, 5 March 2011, [news.bbc.co.uk/1/hi/9400000/9702389.stm](http://news.bbc.co.uk/1/hi/9400000/9702389.stm) (accessed 6 March 2012); Susan Rice, "US: Syria civil war risk increasing after UN veto," *BBC*, 6 February 2012, [www.bbc.co.uk/news/world-middle-east-16916096](http://www.bbc.co.uk/news/world-middle-east-16916096) (accessed 6 March 2012); Navi Pillay cited in "UN raises fears of civil war in Syria," *The Associated Press* posted by *CBC News*, 14 February 2012, [www.cbc.ca/news/world/story/2012/02/14/syria-un-civil-war.html](http://www.cbc.ca/news/world/story/2012/02/14/syria-un-civil-war.html) (accessed 6 March 2012).



## Iraq

Figure 16 Monthly casualties of explosive violence in Iraq



**In 2011, Iraq was the most dangerous place in the world for explosive violence according to data collected by the EVMP.<sup>119</sup> As US forces withdrew from Iraq at the end of the year and authorities cited improving security conditions in the country,<sup>120</sup> the use of IEDs in particular killed and injured more civilians in Iraq than anywhere else in 2011.**

Explosive weapons have consistently killed and injured many more civilians than soldiers, police, or other armed actors. In 2011, Iraq was the country in which the most civilian casualties were reported. More than 5,700 civilians were either killed or injured by explosive weapons during the year. Baghdad was by far the most frequently affected location in the country; 228 incidents were recorded in the capital city, representing almost half of the total incidents of explosive violence recorded by the EVMP in that country. Explosive weapons use was regularly

reported in many other cities and towns, and particularly high numbers of civilian casualties were recorded in Mosul, Kirkuk, and Baquba.

### LARGE-SCALE IED ATTACKS

While explosive ordnance including mortars, rockets, and grenades caused civilian casualties in Iraq in 2011, the vast majority of the casualties reported last year were caused by IEDs. The data recorded from explosive violence in Iraq was marked by nine large-scale attacks during the year, each of which caused more than 100 civilian casualties (see figure 17).

These incidents were all recorded as taking place in populated areas, in locations that included a funeral gathering, a bus full of civilians, and in several crowded shops and marketplaces. On 23 June, 21 civilians were killed by three IEDs that had been hidden within the Shurt al-Raba market in Baghdad. More than a hundred other people were wounded in the attack,

<sup>119</sup> Iraq is described in this report as the 'most dangerous' place in the world for explosive violence because it is the country in which the highest number of civilian casualties were recorded in 2011.

<sup>120</sup> Missy Ryan and Matt Spetalnick, "U.S. to pull out of Iraq after nearly 9 years of war," *Reuters*, 21 October 2011, [www.reuters.com/article/2011/10/22/us-iraq-usa-obama-idUSTRE79K4LR20111022](http://www.reuters.com/article/2011/10/22/us-iraq-usa-obama-idUSTRE79K4LR20111022), (accessed 1 December 2011).

which took place during the evening rush hour at a time when the market was crowded with shoppers, including women and children. One witness described the scene saying, *“Suddenly there were bodies everywhere around me, most of them women and children, and their things were scattered everywhere.”*<sup>121</sup> An average of 33 civilians were killed and injured in the nineteen separate incidents of explosive weapons use that the EVMP recorded in markets.

Iraq Body Count (IBC), which mainly relies on media reports to record data on civilian casualties in the country, has recorded as many civilian deaths (4,087) through acts of violence in Iraq in 2011, as in the previous year (4,045).<sup>122</sup> Many of these fatalities would have been attributable to explosive weapons, and in June 2011 the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) highlighted explosive violence in populated areas in Iraq as a key protection concern.<sup>123</sup>

The coordinated attacks that took place across Iraq on 15 August particularly illustrate the high levels of harm that explosive weapons caused for civilians in 2011. At least 315 civilians were killed and injured in a devastating series of explosions that occurred within a few hours across the country. Car bombs and other IEDs were recorded by the EVMP in 13 towns and cities, and civilians were killed in shops, markets, government buildings, and close to a primary school in Baghdad.<sup>124</sup> A similar pattern of IED attacks took place on 22 December, when more than 15 explosions in Baghdad caused hundreds of casualties.<sup>125</sup> Nearly 100 civilians were killed by explosive weapons every month in 2011.<sup>126</sup> The frequency and

consistent severity of explosive violence in Iraq last year clearly indicates an unacceptable continuing risk to the lives of civilians and a barrier to establishing confidence in the state.

**Figure 17 Ten incidents in Iraq in which IEDs caused more than 100 casualties**

Event description	Civilian casualties
<b>18 January, Tikrit</b> Volunteers at police recruitment centre attacked in an IED blast	<b>217</b>
<b>20 January, Karbala</b> Three car bombs target pilgrims	<b>202</b>
<b>29 March, Tikrit</b> Car bomb and gunfire used in assault on council offices	<b>182</b>
<b>27 January, Baghdad</b> Car bomb hits funeral ceremony	<b>169</b>
<b>12 February, Samarra</b> IED attack on pilgrims at bus depot	<b>128</b>
<b>23 June, Baghdad</b> Three bombs on carts in crowded market	<b>128</b>
<b>27 October, Baghdad</b> Two IEDs outside music store	<b>106</b>
<b>15 August, Kut</b> Car bomb and IED hidden in a freezer kill civilians in market	<b>105</b>
<b>25 September, Karbala</b> Four bombs near a government office kill ten	<b>105</b>

<sup>121</sup> Sijad, a resident of Baghdad, quoted in “Many killed in triple blasts in south Baghdad,” *BBC*, 23 June 2011, [www.bbc.co.uk/news/world-middle-east-13893992](http://www.bbc.co.uk/news/world-middle-east-13893992), (accessed 3 December 2011).

<sup>122</sup> Iraq Body Count, “Iraqi deaths from violence 2003– 2011,” 2 January 2012, [www.iraqbodycount.org/analysis/numbers/2011/](http://www.iraqbodycount.org/analysis/numbers/2011/), (accessed 26 January 2012).

<sup>123</sup> UN Office for the Coordination of Humanitarian Affairs, “Security Council Expert Group briefed on protection of civilians in Iraq,” posted by *reliefweb*, 27 June 2011, [reliefweb.int/node/437402](http://reliefweb.int/node/437402), (accessed 3 December 2011).

<sup>124</sup> “3 persons killed, 31 injured in 5 Baghdad attacks,” *Aswat al-Iraq*, 15 August 2011, [en.aswatiraq.info/%28S%28euos4majxa3ihu55hai4kde1%29%29/Default1.aspx?page=article\\_page&id=144314&l=1](http://en.aswatiraq.info/%28S%28euos4majxa3ihu55hai4kde1%29%29/Default1.aspx?page=article_page&id=144314&l=1), (accessed 17 August 2011).

<sup>125</sup> Sam Dagher and Ali A. Nabhan, “Explosions Rock Baghdad,” *The Wall Street Journal*, 22 December 2011, [online.wsj.com/article/SB10001424052970204464404577113650494043444.html?mod=googlenews\\_wsj](http://online.wsj.com/article/SB10001424052970204464404577113650494043444.html?mod=googlenews_wsj), (accessed 23 December 2011).

<sup>126</sup> According to EVMP data an average of 99.16 civilians were killed every month in Iraq.

## Conclusion

In 2011, data gathered by the Explosive Violence Monitoring Project (EVMP) shows that civilians were killed and injured by explosive weapons on an almost daily basis. Civilians were most affected by reported incidents of explosive violence in Libya, Syria, Iraq, Pakistan, and Afghanistan. Overall, 71% of all the recorded casualties of explosive weapons in 2011 were civilians.

Civilians were most at risk when explosive weapons were used in populated areas. The percentage of civilian casualties increased significantly to 84% when explosive weapons were used in populated areas. Throughout the year the EVMP recorded the frequent deaths and injuries of civilians in markets and shops, places of worship, public buildings and gatherings, and on public transport.

The data presented in this report demonstrates a clear pattern of harm that results from the use of explosive weapons in populated areas. It is a pattern consistent with the distinctive area-effect shared by all explosive weapons in which blast and fragmentation are projected away from the point of detonation.

The harm caused by explosive weapons extends beyond direct, physical casualties. Incidents captured from news sources in 2011 also reflected some of the longer-lasting impacts of explosive weapons, as affected populations suffered trauma and shock in the aftermath of explosions, were forced to flee their homes, were faced with the lingering threat of unexploded ordnance (UXO), endured socio-economic hardships, and suffered from damage and disruption to vital public services and civilian infrastructure.



A man stands among debris inside a church after a bomb attack in central Kirkuk;  
02 August 2011; REUTERS/Stringer

The key findings of this report strongly support the developing stigma against the use of explosive weapons in populated areas. In 2011, the distinct pattern of harm to civilians caused by explosive weapons in populated areas was increasingly articulated as an urgent humanitarian issue.<sup>127</sup> A number of senior UN and government officials delivered forceful statements condemning the use of explosive violence in these contexts during the year, in incidents ranging from the firing of mortars into the Abobo market in Côte d'Ivoire,<sup>128</sup> IED attacks in a bazaar and town square in Afghanistan,<sup>129</sup> and the shelling of a ship delivering humanitarian supplies to the besieged port of Misrata.<sup>130</sup>

In 2011, the UN Security Council adopted resolutions specifically to protect civilians from the harm of heavy explosive weapons in Côte d'Ivoire<sup>131</sup> and Libya.<sup>132</sup> In the two debates in 2011 on the protection of civilians

at the UN Security Council, Austria, Gabon, Mexico, Nigeria, Norway, Slovenia, and Tunisia, as well as the European Union, made strong statements recognising the use of explosive weapons as a distinct humanitarian problem. These statements represent a growing recognition by states of the phenomenon of explosive violence and political will to address its humanitarian harm.<sup>133</sup> Efforts to increase this recognition and active work to build the stigma around the use of explosive weapons in populated areas are needed from states, UN agencies, and civil society.

While this report presents a particular snapshot of the widespread suffering explosive weapons caused to civilians in 2011, the picture it presents of the disproportionate harm to civilians caused by the use of explosive weapons in populated areas is clear. Without preventative action, it is likely that this broad pattern of humanitarian harm will continue.

<sup>127</sup> See for example "International Humanitarian Law and the challenges of contemporary armed conflicts," ICRC, 31st International Conference of the Red Cross and Red Crescent, Geneva, October 2011, [www.icrc.org/eng/assets/files/red-cross-crescent-movement/31st-international-conference/31-int-conference-ihl-challenges-report-11-5-1-2-en.pdf](http://www.icrc.org/eng/assets/files/red-cross-crescent-movement/31st-international-conference/31-int-conference-ihl-challenges-report-11-5-1-2-en.pdf), (accessed 13 February 2012), Human Rights Watch and International Human Rights Clinic, "Documentation of the Use of Explosive Weapons in Populated Areas," November 2011, [www.hrw.org/sites/default/files/related\\_material/2011\\_armsother\\_EWIPA\\_0.pdf](http://www.hrw.org/sites/default/files/related_material/2011_armsother_EWIPA_0.pdf) (accessed 8 March 2012); Roos Boer, Bart Schuurman, Miriam Struyk, "Protecting Civilians from Explosive Violence," IKV Pax Christi, February 2011, [www.ikvpaxchristi.nl/files/Documenten/Veiligheid%20en%20Ontwapening/Explosive%20weapons%20policy%20brief%201%20low%20res.pdf](http://www.ikvpaxchristi.nl/files/Documenten/Veiligheid%20en%20Ontwapening/Explosive%20weapons%20policy%20brief%201%20low%20res.pdf) (accessed 8 March 2012).

<sup>128</sup> Baroness Valerie Amos, UN Humanitarian Chief "United Nations Humanitarian Chief alarmed at Côte d'Ivoire violence," Office for the Coordination of Humanitarian Affairs, New York, 18 March 2011, <http://ochanet.unocha.org/p/Documents/USG%20Amos%20Statement%20CDI%2018March2011.pdf> (accessed 7 November 2011).

<sup>129</sup> ISAF Public Affairs Office, "ISAF Joins President Karzai in Condemning Insurgent Attacks," 1 May 2011, [www.isaf.nato.int/article/isaf-releases/isaf-joins-president-karzai-in-condemning-insurgent-attacks.html](http://www.isaf.nato.int/article/isaf-releases/isaf-joins-president-karzai-in-condemning-insurgent-attacks.html) (accessed 3 March 2011).

<sup>130</sup> Andrew Mitchell, UK Secretary of State for International Development, cited in Adrian Bloomfield, "Libya: aid ship cuts short mission in Misurata after coming under fire," *The Telegraph*, 4 May 2011, <http://www.telegraph.co.uk/news/worldnews/africaandindianocean/libya/8493150/Libya-aid-ship-cuts-short-mission-in-Misurata-after-coming-under-fire.html> (accessed 06 January 2012).

<sup>131</sup> UN Security Council Resolution 1975 (2011), adopted by the Security Council at its 6508th meeting, 30 March 2011, S/RES/1975 (2011), [www.un.org/Docs/sc/unsc\\_resolutions11.htm](http://www.un.org/Docs/sc/unsc_resolutions11.htm) (accessed 13 February 2012).

<sup>132</sup> UN Security Council Resolution 1973 (2011), adopted by the Security Council at its 6498th meeting, 17 March 2011, S/RES/1973 (2011), [www.un.org/Docs/sc/unsc\\_resolutions11.htm](http://www.un.org/Docs/sc/unsc_resolutions11.htm) (accessed 13 February 2012).

<sup>133</sup> Statements can be found at United Nations Documentation: Research Guide, "Meetings conducted/Actions taken by the Security Council in 2011," United Nations Dag Hammarskjöld Library, SC/10442, [www.un.org/Depts/dhl/resguide/scact2011.htm](http://www.un.org/Depts/dhl/resguide/scact2011.htm) (accessed 3 March 2012). For more information on recent statements made by states and other actors, see International Network on Explosive Weapons, "Acknowledging the harm," [www.inew.org/acknowledgements](http://www.inew.org/acknowledgements) (accessed 3 March 2012).

## Annex: Explosive Violence Monitoring Project background

The methodology for the EVMP is an adaptation of the incident-based methodology used by Landmine Action and Medact in 2009, which in turn was based on the Robin Coupland and Nathan Taback model.<sup>127</sup> Selected guidelines and limitations of the EVMP methodology are highlighted below. Data on explosive violence incidents is gathered from English-language media reports on the following factors: the date, time, and location of the incident; the number and circumstances of people killed and injured; the weapon type; the reported user and target; the detonation method and whether displacement or damage to the location was reported. The EVMP is not an attempt to comprehensively capture all incidents of explosive violence around the world but to serve as a useful indicator of the scale and pattern of harm. **No claims are made that this data captures every incident or casualty of explosive violence in 2011.**

### SELECTING INCIDENTS

The EVMP uses an RSS reader to scan Google News for key terms which relate to explosive weapon use: \*explosion \*grenade \*shell \* mortar \* cluster munitions \*cluster bomb \*mine \*rocket \*missile \*bombing \*bomb \*IED \*explosive \*artillery \*air strike.

At least one casualty from an explosive weapon must be reported in order for an incident to be recorded. Incidents with no clear date or which merely give a location as a country are excluded, as are incidents which occur over a period of more than 24 hours (e.g. 150 people killed by shelling over the last week). Casualty numbers must be clearly stated; reports which only describe 'several' or 'numerous' cannot be recorded.

When there are multiple sources for the same incident, those which provide the most detail or most recent casualty information are selected.

### SOURCES

The EVMP uses a wide range of English-language news sources, many of which are translated by the publisher. In total there were 577 different sources used in 2011, with the ten most used being Reuters (used as either

the first or second source for 477 incidents in 2011), *The Associated Press* (421), *Agence France-Presse* (384), *Xinhua* (303), *Deutsche Presse-Agentur* (137), *Aswat al-Iraq* (131), *BBC* (130), *CNN* (123), *Press TV* (123), and *The International News Pakistan* (92).

### RECORDING GUIDELINES

#### *Civilian/armed actor or security personnel:*

All casualties are assumed to be civilians unless otherwise stated. Casualties are recorded as 'armed actors' if they are reported as being members of the military, members of non-state armed groups, or security personnel who the EVMP considers likely to be armed, for example; police, security guards, intelligence officers, and paramilitary forces.

#### *Intended target:*

The target for an attack is only recorded if one of the three conditions below are met:

- The target is declared by the user.
- It is clearly reported in the source.
- The specific contextual conditions of use clearly indicate a target (e.g. if an IED is attached to the car of a police officer or soldier, 'State armed' is recorded as the target).

#### *Populated area:*

Incidents are designated as occurring in populated areas likely to contain concentrations of civilians if:

- a) It is stated in the source (e.g. a busy street, a crowded market);
- b) If an incident occurs in or near a pre-defined location which is likely to contain concentrations of civilians e.g. commercial premises, entertainment venues, hospitals, hotels, encampments (containing IDPs, refugees, nomads), markets, places of worship, public gatherings, public buildings, public transport, schools, town centres, urban residential neighbourhoods, villages/ compounds. This definition of a populated area is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: "any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns

<sup>127</sup> For more information see [www.insecurityinsight.org](http://www.insecurityinsight.org)



*of refugees or evacuees, or groups of nomads.*"<sup>128</sup>

#### *User status:*

Responsibility for the use of explosive weapons is assigned where any of the following conditions are met:

- The group or actor responsible has claimed responsibility.
- The user of the explosive weapon is clearly stated in the report.
- If the user of the explosive weapon has employed technology clearly associated only with that user in the context in question.

If none of these conditions are met then the user is recorded as unknown. Users are recorded as 'state and non-state' when both users are identified but it is not possible to establish which one was responsible for the particular incident.

### **LIMITATIONS**

This methodology is subject to a number of limitations and biases, many relating to the nature of the source material on which it is dependent and the lack of a mechanism to follow up reports with in-depth investigation. It is recognised that there are very different levels of reporting across regions and countries so that under-reporting is likely in some contexts. In addition, only English-language media reports are used, which does not provide a comprehensive or definitive picture of explosive weapon use around the world.

The EVMP methodology is designed to capture distinct incidents of explosive violence with a clear date and location. In some contexts of explosive violence, particularly during intense armed conflict, casualties could not be assigned to specific incidents but a total number was reported as the result of a period of days. These casualties were not included in the dataset.

As the methodology relies on reports which are filed shortly after an incident took place, there is no mechanism for assessing whether people reported as wounded in the immediate aftermath of an incident subsequently died from their injuries. This is another factor that should be assessed when considering the likelihood that the actual numbers of fatalities of explosive violence are higher than the numbers recorded by the EVMP.

On a number of occasions firearms were also reported as having been used alongside explosive weapons. While the EVMP always tries to determine the casualties specifically caused by explosive weapons, in these incidents news sources are not always able to clarify which casualties were caused by which weapon type, particularly in incidents that involved large numbers of casualties. It is therefore possible that some casualties in these incidents may not have been caused by explosive weapons.<sup>129</sup>

Media reports used by the EVMP are a valuable resource for better understanding the scale and pattern of explosive violence use. However, these reports are less helpful for capturing other types of harm known to be characteristic of explosive weapons in populated areas. Damage to infrastructure, the risk of ERW, long-term health effects, and displacement are all aspects of the pattern of harm caused by explosive weapons which are not fully represented in the data set.<sup>130</sup> However, reporting on these effects is often limited, with news sources focusing on the immediate aftermath of an incident. For instance, only 28 of the 2,522 incidents had accounts of people being displaced in the source reports. Effects which are the result of cumulative levels of explosive violence, for instance communities displaced by heavy shelling or continued insecurity are not fully represented by the EVMP dataset.

<sup>128</sup> "Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III)," to the UN Convention on Certain Conventional Weapons, Geneva, 10 October 1980, [www.icrc.org/ihl.nsf/FULL/515](http://www.icrc.org/ihl.nsf/FULL/515) (accessed 2 March 2012).

<sup>129</sup> See for example a series of co-ordinated bombings and shootings in Damaturu, Nigeria. Ibrahim Bello, "Multiple bomb blasts in Damaturu," *Daily Times Nigeria*, 5 November 2011, <http://dailytimes.com.ng/article/multiple-bomb-blasts-damaturu> (accessed 5 March 2012).

<sup>130</sup> For further information on the wide range of effects of explosive weapons see for example Esther Cann and Katherine Harrison, "100 Incidents of Humanitarian Harm: Explosive Weapons in Populated Areas, 2009-10," Action on Armed Violence, March 2011, [www.aov.org.uk/uploads/changing\\_policy/march\\_2011\\_100\\_incidents\\_of\\_humanitarian\\_harm.pdf](http://www.aov.org.uk/uploads/changing_policy/march_2011_100_incidents_of_humanitarian_harm.pdf) (accessed on 28 February 2012) and Richard Moyes, "Explosive Violence: the problem of explosive weapons," Landmine Action, 2009, p.7, [www.aov.org.uk/uploads/changing\\_policy/august\\_2009\\_explosive%20violence\\_the\\_problem\\_of\\_explosive\\_weap.pdf](http://www.aov.org.uk/uploads/changing_policy/august_2009_explosive%20violence_the_problem_of_explosive_weap.pdf) (accessed 13 February 2012).







## **CONTACT**

---

### **Action on Armed Violence**

5th Floor, Epworth House

25 City Road

London EC1Y 1AA

**T** +44 (0)20 7256 9500

**F** +44 (0)20 7256 9311

**E** [info@aoav.org.uk](mailto:info@aoav.org.uk)

---

**[www.aoav.org.uk](http://www.aoav.org.uk)**